ORDER NO. CAD91120478C2

Service Manual

Microwave Oven

NN-D501, NN-D551
NN-D801, NN-D851

Specifications

Power Source :	230 V AC Single Phase 50 Hz
Power Requirement :	1,940 W·····Max. 1,480 W·····Microwave
Output :	800 W·····Full Microwave Power (IEC-705) 1,880 W·····Heater
Microwave Frequency :	2,450 MHz
Timer :	99 Min. 99 Sec./9 Hr. 99 Min.
Outside Dimensions :	558 mm (W) × 520 mm (D) × 389 mm (H)
Oven Cavity Dimensions :	367 mm (W) × 387 mm (D) × 254 mm (H)
Weight :	33.3 kg
Specifications subject to change without notice.	

Panasonic

This service manual covers products for following markets.
When troubleshooting or replacing parts, please refer to the country identifications shown below for your applicable product specification.
SPG·····For Scandinavian Countries
WPG·····For Switzerland

WARNING
This products should be serviced only by trained, qualified personnel.

VARNING
Denna apparat skall repareras endast av härför kvalificerad personal.

VAROITUS
Laitetta saa huoltaa ainoastaan tehtävään koulutettu, ammattitaitoinen huoltomies.

ADVARSEL
Reparasjoner må kun utføres av kvalifisert personell.

ADVARSEL
Disse produkter må kun repareres af kvalificerede teknikere med specialuddannelse.

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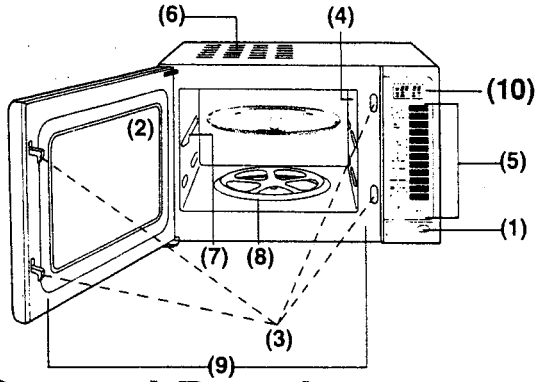
FEATURE CHART

MODEL / FEATURE	NN-D801 NN-D851	NN-D501 NN-D551
CYCLIC DEFROST	○	○
THREE STAGE COOKING	○	○
BAKE COOKING	○	○
CONVECTION COOKING	○	○
GRILL COOKING	○	○
FAN FORCED GRILL	○	○
COMBINATION COOKING	○	○
AUTO WEIGHT DEFROST	—	○
SENSOR DEFROST	○	—
AUTO WEIGHT COOK PROGRAM	—	○
AUTO SENSOR COOK PROGRAM	○	—
DELAY/STAND	○	○
MEMORY RECIPE	○	—
DIGITAL CLOCK	○	○

FEATURE DIAGRAM & CONTROL PANEL

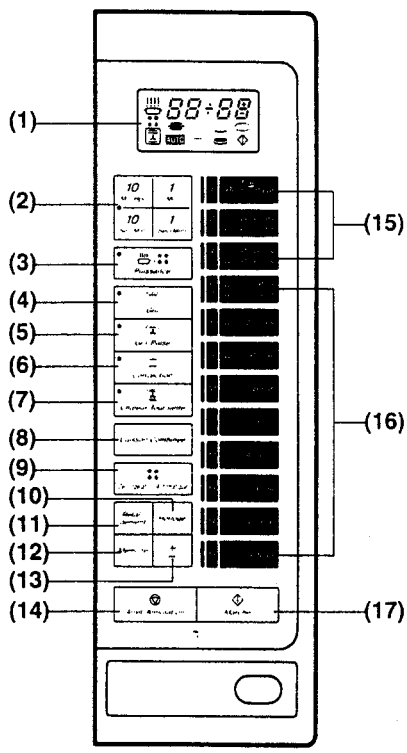
Feature Diagram



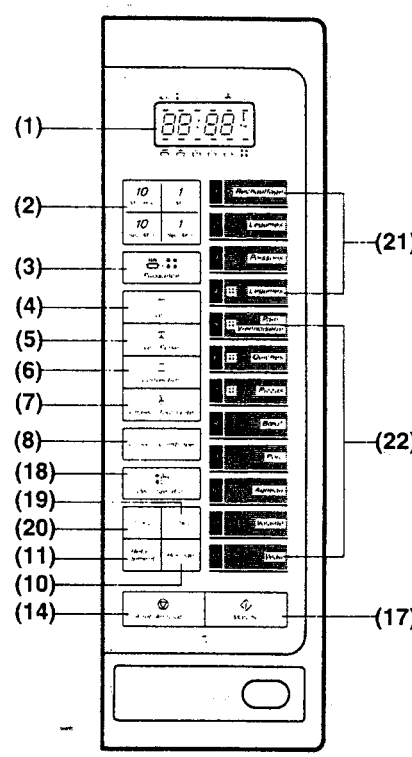
(1) Door Release Button
(2) Oven Window
(3) Door Safety Lock System
(4) Oven Air Vents
(5) Control Panel
(6) External Oven Air Vents
(7) Slide in Shelf Guides
(8) Metal Turntable Support
(9) Door Seal Area
(10) Display Window

Control Panel

NN-D801/NN-D851



NN-D501/NN-D551



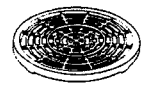
* Controls with Auto Count-Up Feature

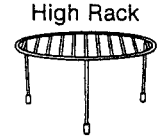
(1) Display Window
(2) Time Pads*
(3) Micro Power Pad*
(4) Grill Pad*
(5) Bake Pad*
(6) Convection Pad*
(7) 2 Level Convection Pad*
(8) Combination Pad
(9) Sensor Defrost Pad
(10) Clock Pad
(11) Delay/Stand Pad
(12) Your Recipe Pad
(13) More/Less Pad
(14) Stop/Cancel Pad
(15) Auto Programs by Sensor MICROWAVE
(16) Auto Programs by Sensor COMBINATION
(17) Start Pad
(18) Auto Weight Defrost Pad
(19) 0.1kg/1oz pad*
(20) 1kg/1lb pad*
(21) Auto Weight Cook Programs MICROWAVE
(22) Auto Weight Cook Programs COMBINATION

USE OF OVEN ACCESORIES

Oven Accessories

The following is a chart in which you will find the correct use of the accessories in the oven.

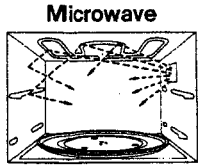
	Glass Turntable	Plastic Defrost Rack (NN-D801/D851) 	Metal Turntable	Square Metal Pan
Microwave	YES	YES (DEFROST only)	NO	NO
Grill	NO	NO	YES	YES
Fan Forced Grill	NO	NO	YES	NO
Bake	NO	NO	YES	YES
Convection	NO	NO	YES	YES
Combination	NO	NO	YES	NO
Display (NN-D801/D851)				

	Splash Guard	Low Rack	High Rack 
Microwave	NO	NO	NO
Grill	YES	NO	YES
Fan Forced Grill	YES	NO	YES
Bake	NO	NO	NO
Convection	NO	YES	NO
Combination	YES	YES	NO
Display (NN-D801/D851)			

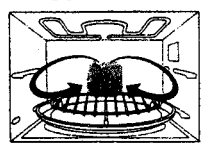
Cooking Modes

The accessories shown below on Convection, Microwave+Grill and Microwave+Fan Forced Grill Modes may vary depending on recipe/dish used.

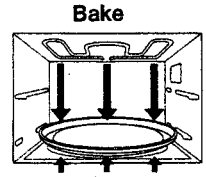
Microwave



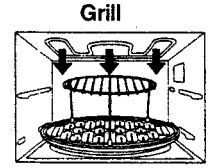
Convection



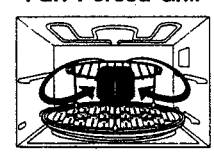
Bake



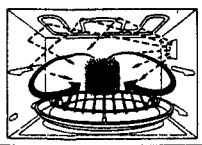
Grill



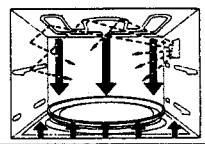
Fan Forced Grill



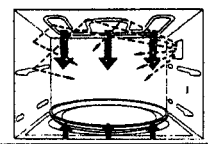
Microwave +Convection



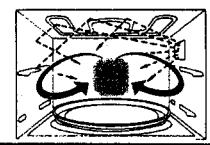
Microwave +Bake



Microwave +Grill



Microwave +Fan Forced Grill

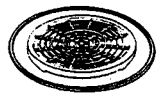
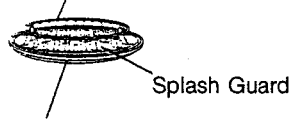
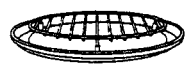
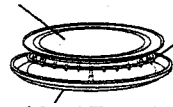


Microwave

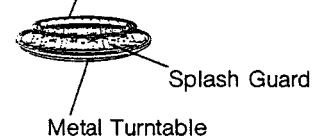
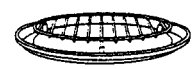
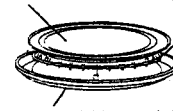
Convection

Use of Accessory:

NN-D801/NN-D851

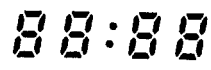
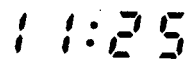
Pad	Accessory
Sensor Defrost	Plastic Defrost Rack  Glass Turntable
1. Reheat 2. Vegetables 3. Root Veg. 4. Potatoes 5. Grain 6. Fish 7. Froz. Veg.	Glass Turntable
8. Pork 9. Poultry 10. Roast Beef 11. Veal	Low Rack  Splash Guard Metal Turntable
12. Gratin	Low Rack  Metal Turntable
13. Froz. Foods	Dish * Low Rack  Metal Turntable *Place food on the dish on the Low Rack. Heat-Resistant and Microwave-safe dish which weights 300-500g is available.
14. Cake	Metal Turntable

NN-D501/NN-D551

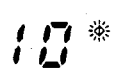
Pad	Accessory
Defrost 1. Reheat 2. Vegetables 3. Root Veg. 4. Potatoes 5. Fish 6. Froz. Veg.	Glass Turntable
7. Pork 8. Poultry 9. Roast Beef 10. Veal	Low Rack  Splash Guard Metal Turntable
11. Gratin	Low Rack  Metal Turntable
12. Froz. Foods	Dish * Low Rack  Metal Turntable *Place food on the dish on the Low Rack. Heat-Resistant and Microwave-safe dish which weights 300-500g is available.

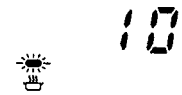
OPERATION AND DIGITAL PROGRAMMER CIRCUIT TEST PROCEDURE (For NN-D501, NN-D551)

1. To Set Clock

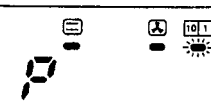
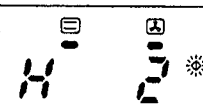
OPERATION	DISPLAY
1. Plug the power supply cord into wall outlet.	
2. Press [Clock] (🕒) pad.	
3. Enter time of day (TOD) by pressing appropriate [10][1][10][1] pads.	
4. Press [Clock] (🕒) pad. TOD has now been registered into the digital programmer circuit and will count up by minutes.	

2. Time Cooking For Two Stage

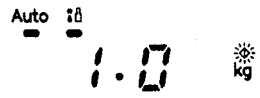
OPERATION	DISPLAY
1. Place a water load in the oven.	
2. Press [Power] pad once for High power. (1st stage)	
3. Set for 5 seconds by pressing [10][1][10][1] pad.	
4. Press [Power] pad 3 times for Medium power. (2nd stage)	
5. Set for 10 seconds by pressing [10][1][10][1] pad.	
6. Press [Start] pad.	

OPERATION	DISPLAY
7. When first stage cooking time has elapsed, oven automatically switches to 2nd stage cooking.	
8. When 2nd stage cooking time has elapsed, oven beeps 5 times and shuts off.	

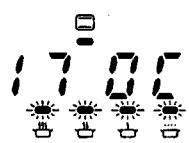
3. Convection Cooking with Preheat

OPERATION	DISPLAY
1. Press [Convection] pad 6 times to set temperature 200°C.	
2. Press [Start] pad.	
3. When preheating is completed, oven beeps 3 times. "P" begins to blink.	
4. After completion of preheating, be sure to open the door.	
5. Close the door and set convection cooking time for 2 minutes.	
6. Press [Start] pad.	

4. Auto Weight Defrost

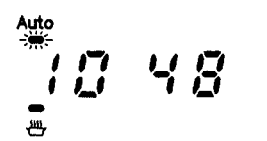
OPERATION	DISPLAY
1. Press [Auto Defrost] Pad.	
2. Set the weight for 1 kg by pressing [1.0 kg] pad.	
3. Press [Start] Pad.	
4. Press [Stop/Reset] pad twice Oven shuts off.	TOD reappears in the display window.

5. Combination Cooking with Preheat

OPERATION	DISPLAY
1. Press [Combination] pad.	
2. Set Bake Combination mode and cooking temperature for 170°C by pressing [Bake] ( ) pad. 3 times.	
3. Set Combination Microwave power for Low power by pressing [Power] ( ) pad twice.	
4. Press [Start] ( ) pad.	
5. When preheating is completed, oven beeps 3 times. "P" being to blink.	

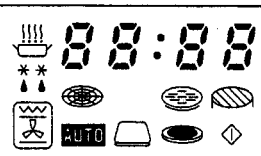
OPERATION	DISPLAY
6. After completion of preheating be sure to open the door.	
7. Close the door and set cooking time for 30 minutes by pressing [10] [1] [10] [1] pad.	
8. Press [Start] ( ) pad.	

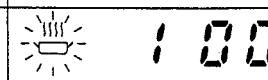
6. Auto Weight Cook Program

OPERATION	DISPLAY
1. Press [1 Reheat] pad.	
2. Set weight 1.0kg by pressing [1.0kg] pad.	
3. Press [Start] ( ) pad.	

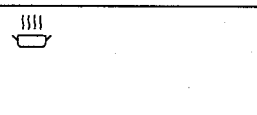
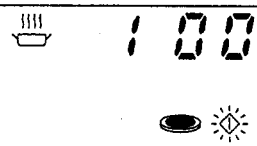
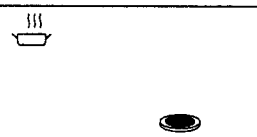
OPERATION AND DIGITAL PROGRAMMER CIRCUIT TEST PROCEDURE (For NN-D801, NN-D851)

1. To Set Clock

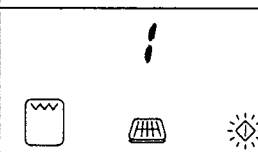
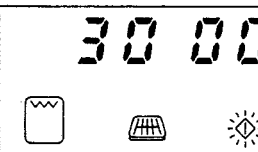
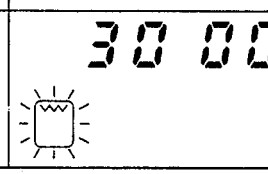
OPERATION	DISPLAY
1. Plug the power cord into wall outlet.	
2. Press Clock (🕒) pad.	
3. Enter time of day (TOD) by pressing 10 1 10 1 pad.	
4. Press Clock (🕒) pad. TOD has now been resistered into the digital programmer circuit and will count up by minutes.	

OPERATION	DISPLAY
5. Set for 30 seconds by pressing 10 1 10 1 pad.	
6. Press Start (◇) pad.	
7. When 1st stage cooking time has elapsed, oven automatically switches to 2nd stage cooking.	
8. When 2nd stage cooking time has elapsed, oven beeps 5 times and shouts off.	

2. Time Cooking For Two Stage

OPERATION	DISPLAY
1. Place a water load in the oven.	
2. Press Power (🍲-❄) pad once for High power. (1st stage)	
3. Set for 1 minute by pressing 10 1 10 1 pad.	
4. Press Power (🍲-❄) pad 3 times for Medium power. (2nd stage)	

3. Grill Cooking

OPERATION	DISPLAY
1. Press Grill (▭) pad once.	
2. Set cooking time for 30 minutes by pressing 10 1 10 1 pad.	
3. Press Start (◇) pad.	

4. Combination Cooking with Preheat

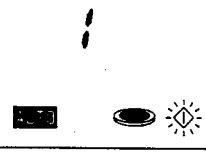
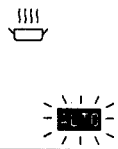
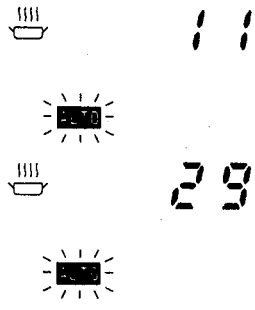
OPERATION	DISPLAY
1. Press Combination pad.	
2. Set Bake Combination mode and cooking temperature for 170°C by pressing Bake (☰) pad 3 times.	170C
3. Set Combination Microwave power for Low power by Power (~) pad once.	170C
4. Press Start (◇) pad.	P
5. When preheating is completed, oven beeps 3 times "P" being to blink.	P
6. After completion of preheating be sure to open the door.	P
7. Close the door and set cooking time for 30 minutes by pressing 10 1 10 1 pad.	H 30
8. Press Start (◇) pad.	30 00

5. Sensor Defrost

OPERATION	DISPLAY
1. Place the water load of 500g including container with plastic rack at center of glass tray and press Sensor Defrost pad.	AUTO
2. Press Start (◇) pad.	AUTO
3. After reading weight of food, total defrost cooking time is appeared.	15 00 AUTO

NOTE: If 12 to 18 minutes appears, Sensor Defrost function is normal.

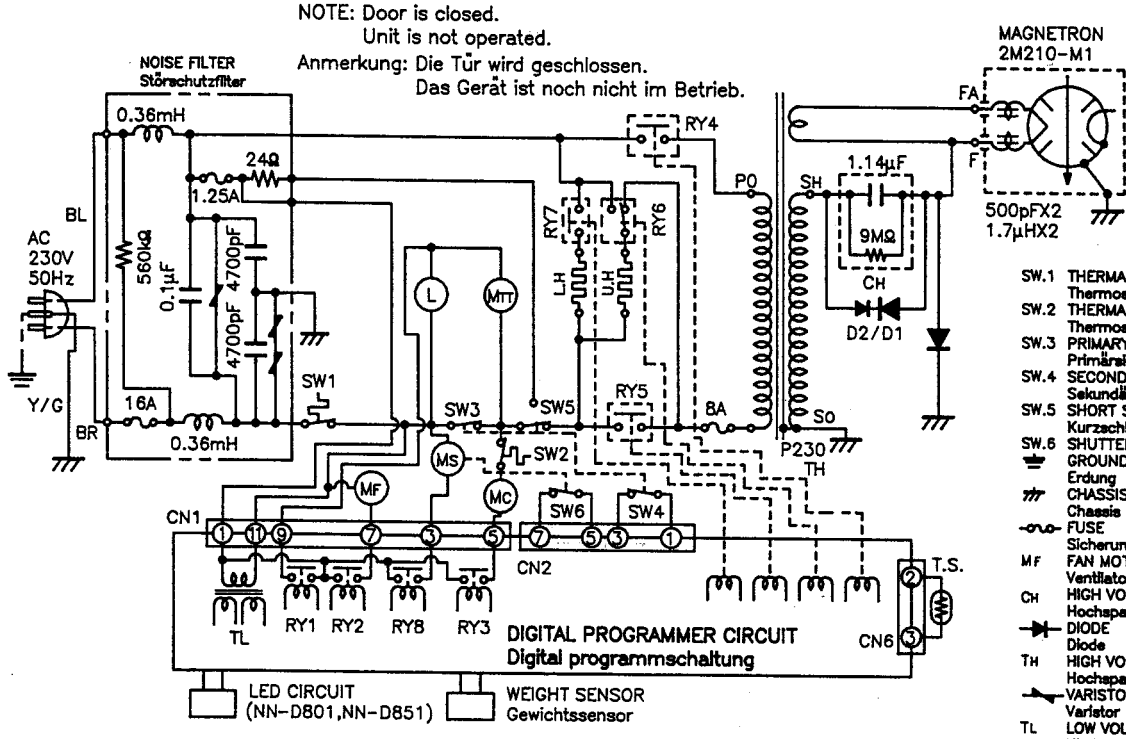
6. Auto Sensor Cook Program (1 Reheat)

OPERATION	DISPLAY
1. Pour 300 ± 15ml of room temperature water in a beaker and place it in the center of the oven.	
2. Press [1 Reheat] pad.	
3. Press [Start] (◇) pad.	
4. The weight sensor detects looseness of weight in about 2 to 5 minutes after the Start pad is pressed. Auto sensor cooking (T1) automatically switches to time cooking (T2) "1" disappeared with beep sounds and the remainder of cooking time appears in the display window.	
5. When the balance of cooking time has elapsed, oven stops and beeps 5 times.	• TOD reappears in the display window.

NOTE: If 11 to 29 seconds appears, Auto Sensor function is normal.

SCHEMATIC DIAGRAM

NOTE: Door is closed.
Unit is not operated.
Anmerkung: Die Tür wird geschlossen.
Das Gerät ist noch nicht im Betrieb.

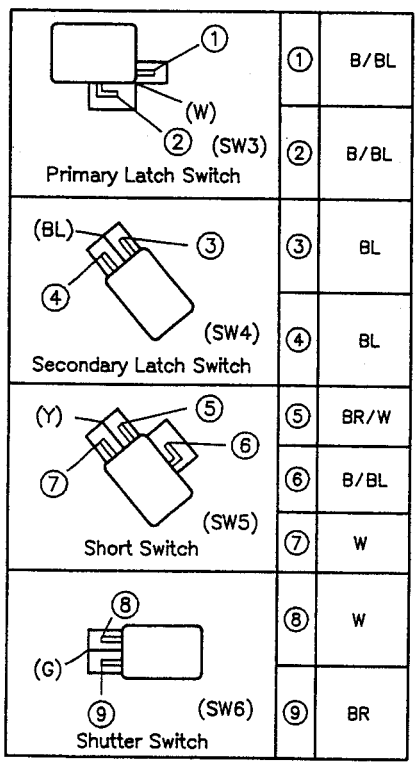


SW.1 THERMAL CUTOUT A (MAG)
Thermoschalter A (Magnetron)
SW.2 THERMAL CUTOUT B (OVEN)
Thermoschalter B (Garraum)
SW.3 PRIMARY LATCH SWITCH
Primärsicherheitsschalter
SW.4 SECONDARY LATCH SWITCH
Sekundärsicherheitsschalter
SW.5 SHORT SWITCH
Kurzschlußschalter
SW.6 SHUTTER SWITCH
GROUNDING
Erdung
CHASSIS GROUND
Chassis Erdung
FUSE
Sicherung
MF FAN MOTOR
Ventilatormotor
CH HIGH VOLTAGE CAPACITOR
Hochspannungskondensator
DIODE
Diode
TH HIGH VOLTAGE TRANSFORMER
Hochspannungstransformator
VARISTOR
Varistor
TL LOW VOLTAGE TRANSFORMER
Niederspannungstransformator
PROTECTOR DIODE
D2/D1 Sicherungsdiode
L OVEN LAMP
Garraumlampe
MTT TURNTABLE MOTOR
Drehtellermotor
U.H. UPPER HEATER
Obere Heizung
L.H. LOWER HEATER
Untere Heizung
MS SHUTTER MOTOR
T.S. TEMPERATURE SENSOR
Thermosensor
MC CIRCULATION MOTOR
Lüftermotorr
RY.1 POWER RELAY 1
Leistungsrelais 1
RY.2 POWER RELAY 2
Leistungsrelais 2
RY.3 POWER RELAY 3
Leistungsrelais 3
RY.4 POWER RELAY 4
Leistungsrelais 4
RY.5 POWER RELAY 5
Leistungsrelais 5
RY.6 POWER RELAY 6
Leistungsrelais 6
RY.7 POWER RELAY 7
Leistungsrelais 7
RY.8 POWER RELAY 8
Leistungsrelais 8
OR ORANGE/Orange
B BLACK/Schwarz
BL BLUE/Blau
W WHITE/Weiß
Y YELLOW/Gelb
G GREEN/Grün
BR BROWN/Braun
R RED/Rot
LB LIGHT BLUE
Hellblau
P PINK/Rosa

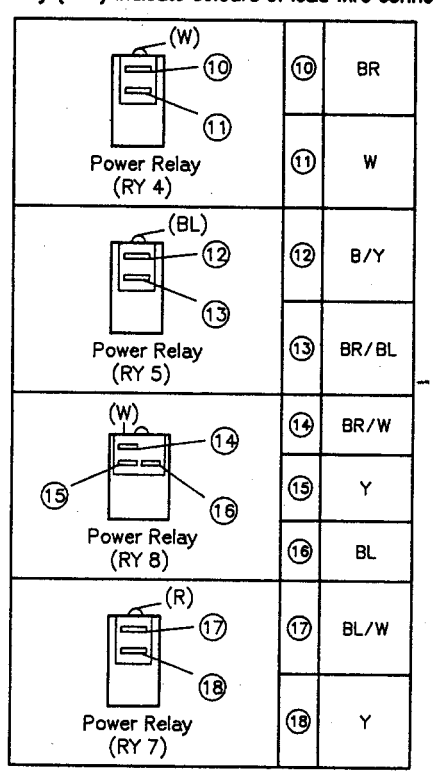
WIRING DIAGRAM
VERBINDUNGSBILD

Anmerkung:
*Beim Auswechseln, die Farbe des Verbindungskabels beachten.
*Die Farbeangabe in Klammer entspricht der Farbe der Anschlußklemme.

NOTE:
*When replacing, check the lead wire colour as shown.
*Colours shown by ( ) indicate colours of lead wire connector housing.



①	B/BL
②	B/BL
③	BL
④	BL
⑤	BR/W
⑥	B/BL
⑦	W
⑧	W
⑨	BR



⑩	BR
⑪	W
⑫	B/Y
⑬	BR/BL
⑭	BR/W
⑮	Y
⑯	BL
⑰	BL/W
⑱	Y

74-005

DESCRIPTION OF OPERATING SEQUENCE

1. Variable power cooking control

The coil of power relay 4 (RY 4) is energized intermittently by the digital programmer circuit, when the oven is set at any power selection except for High power position. The digital programmer circuit controls the ON-OFF time of power relay 4 contacts in order to vary the output power of the microwave oven from "Warm" to "High" power.

One complete ON and OFF cycle of power relay 4 is 22 seconds.

The relation between indications on the control panel and the output of the microwave oven is as shown in table.

NOTE: The ON/OFF time ratio does not correspond with the percentage of microwave power since approximately 2 seconds are required for heating of magnetron filament.

POWER SETTING	OUTPUT POWER(W) APPROX.	ON-OFF TIME OF POWER RELAY 4	
		ON(SEC)	OFF(SEC)
HIGH	800	22	0
MEDIUM	560	17	5
LOW	420	13	9
SIMMER	240	8	14
WARM	90	4	18
CYCLIC DEFROST	APPROX. 130W	Please refer to description of cyclic defrost	

2. Cyclic defrost

When Defrost power and defrosting time is selected and Start pad is tapped:

(A) The digital programmer circuit (DPC) divides the total defrosting time into 8 cycles of alternating ON-OFF intervals of defrosting power and standing periods.

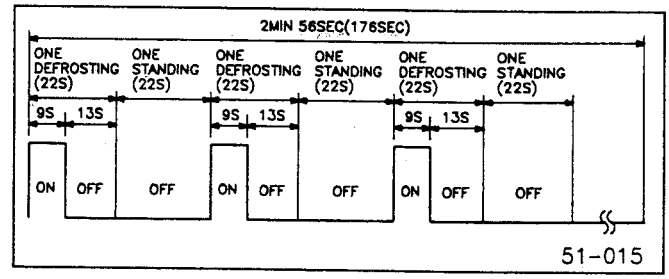
(B) During each defrosting period, power relay 4 is energized for 9 seconds and de-energized for 13 seconds by DPC.

(C) During standing periods, power relay 4 is always open resulting in no microwave power.

NOTE: Defrost time selected is converted into seconds by the DPC but display will show selected time in minutes and seconds as programmed. The total number of seconds is divided into 8 time periods. The remainder (seconds not equally divisible by 8) are added to the last standing time period.

Example 1: If defrosting time is selected for 2 minutes 56 seconds, each operating period will be as follows:
2 minutes 56 seconds = 176 seconds
176/8 = 22

NOTE: When defrosting time is selected for not more than 7 seconds, the power relay 4 will not be energized at all.



3. Auto Weight Defrost, Auto Weight Cook Program Control (NN-D501, NN-D551)

When those Auto Control feature is selected and the Start Pad is tapped:

(A) The digital programmer circuit determines the power level and cooking time to complete cooking and indicates the operating state in the display window.
Table shows the corresponding cooking times for respective serving by categories.

(B) When cooking time in the display window has elapsed, the oven turns off automatically by a controll signal from the digital programmer circuit.

CATEGORY	WEIGHT SELECTED	TOTAL COOKING TIME
Auto Defrost	1.0 kg	35 Min. 01 Sec.
1. Reheat	1.0 kg	10 Min. 48 Sec.
5. Fish	1.0 kg	11 Min. 39 Sec.
7. Pork	1.0 kg	30 Min. 00 Sec.
8. Poultry	1.0 kg	29 Min. 19 Sec.

4. Auto sensor cooking (NN-D801, NN-D851)

Category: 1. Reheat, 2. Vegetables, 3. Root Vegetables, 4. Potato, 5. Grain, 6. Fish, 7. Frozen Vegetables.

Auto sensor cooking is a revolutionary way to cook by microwave without setting a power level or selecting a time.

All that is necessary is to select an Auto Sensor Program before starting to cook.

Understanding Auto Sensor Cooking

As a food cooks, a certain amount of steam is produced. This steam causing looseness of microscopic weight of foods. In Auto Sensor Cooking, a carefully designed instrument, called the weight sensor unit, senses this weight change. Then, based upon the Auto Sensor Program selected, the unit will automatically determine the correct power level and the proper length of time it will take to cook the food.

NOTE: Auto Sensor Cooking is successful with the foods and recipes found in the Cookbook. Because of the vast differences in food composition, items not mentioned in the Cookbook should be prepared in the microwave oven using power select and time features. Please consult Variable Power Microwave Cookbook for procedures.

Explanation of the Auto Sensor Cooking process (See Figure)

1) During the first 12 seconds period, weight sensor reads initial food weight.
2) During the first 12 second period there is no microwave activity, and when calculating the T2 time by using the formula below make sure this 12 seconds is subtracted from the T1 time. In other words T1 time starts at the end of the 12 second period. (This 12 second period is needed for the sensor element to stabilize and balance itself before microwave activity starts.)
3) **T1 time**·····The total amount of time it takes the microwave oven to switch to T2 time after the 12 second period. During this time one of the Auto Sensor programs (1-5) will be shown in display.
4) **T2 time**·····When the steam escapes from the cooking container placed in the oven, the weight sensor detects it and the microprocessor calculates the balance of cooking time. This T2 time is then shown in the display and begins counting down.

Balance of cooking time (T2 time)

The balance of cooking time which is called T2 time, can be calculated by the following formula.

T2 time (in sec.) =T1 time × K factor

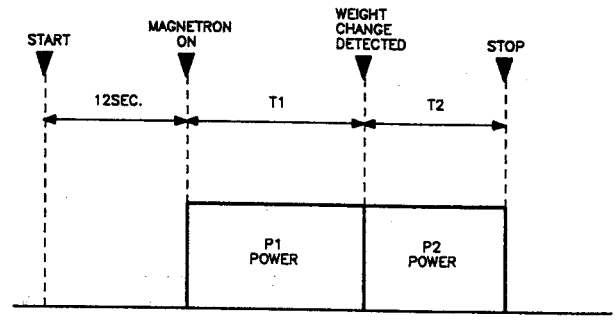
NOTE: Remember, the T1 time starts after the 12 second period. The coefficient K is programmed into the microprocessor memory and they are listed in the following tables along with the P1 and P2 powers. (See **Figure**)

Example of calculating the T2 time

Example 1: If the T1 time is measured to be 2 minutes and 40 seconds after the 12 second period, and the Auto program selected is 1. Reheat

T2 = T1 × K
= 2 min. and 40 sec. × 0.1
= 160 sec. × 0.1
= 16 sec.

AUTO SENSOR COOKING PROCESS



Auto Sensor Cook

Category	P1 Power	P2 Power	K factor Standard
1. Reheat	HIGH	WARM	0.1
4. Potato	HIGH	HIGH	0.3

5. Auto Sensor Cook Program (NN-D801, NN-D851)

Category: Sensor Defrost, 8. Pork, 9. Poultry, 10. Roast Beef, 11. Veal, 12. Gratin, 13. Frozen Food, 14. Cake.

In microwave cooking, the cooking time varies by composition and volume of the food.

For example, if the same type of food is cooking, the greater it's volume, the longer the cooking time is required.

If the volume of food is known, the food can be cooked automatically by the predetermined cooking time for applicable food categories.

The weight sensor was developed to determine the volume of the food.When the Auto Cooking feature is selected by tapping the appropriate key pads and Start pad is tapped:

(A) The digital programmer circuit and weight sensor determine the power level, oven temperature and combination cooking time to complete cooking and indicates the operating state in the display window.

The table shows the auto cooking times for respective weights by categories.

(B) When the auto cooking time in the display window has elapsed, the oven turns off automatically by the controlled signal from the digital programmer circuit.

NOTE: Auto cooking time will vary due to tolerance of weight sensor reading as shown in the table.

WEIGHT OF FOOD	TOTAL COOKING TIME		
	Sensor Defrost	8. Pork	9. Poultry
500 g	16 min. 30 sec. ≀ 11 min. 00 sec.	18 min. 00 sec. ≀ 12 min. 00 sec.	21 min. 30 sec. ≀ 17 min. 30 sec.
	10. Roast Beef	11. Veal	14. Cake
500 g	17 min. 50 sec. ≀ 15 min. 30 sec.	16 min. 00 sec. ≀ 10 min. 40 sec.	34 min. 00 sec. ≀ 27 min. 40 sec.

NOTE: Make sure to use proper accessory according to display window instruction for accurate testing and cooking.

6. Bake cooking control

The digital programmer circuit controls the ON-OFF time of upper and lower heater in order to control the oven cavity temperature, see table and figure.

(A) The digital programmer circuit generates the power relay 6 and 7 control signals at a specific timing as shown in table.

(B) When the oven reaches the selected temperature, the digital programmer circuit senses the temperature through oven temp sensor and stops supplying 18V DC to the power relays 6 and 7 resulting in turn off of upper and lower heaters. After the heaters have been turned off, the oven temperature will continue to increase a while then decrease as shown in figure.

(C) When the oven temperature drops below selected temperature, the digital programmer circuit senses the oven temperature and starts supplying 18V DC to the coils of power relays 6 and 7 alternately again.

NOTE 1: ON-OFF time of upper heater and lower heater vary depending on the selected oven temperature as shown in table. When bake is selected with temperature setting of 40, 100-250°C, off period of both heaters is also programmed while oven temperature is lower than selected temperature, as shown in figure.

NOTE 2: After bake process, if oven temperatune is higher than predetermind temperature, fan motor rotates for 4 minutes 15 seconds at maximum time to cool the electric components and oven.

Heater ON-OFF Time for Bake Cooking

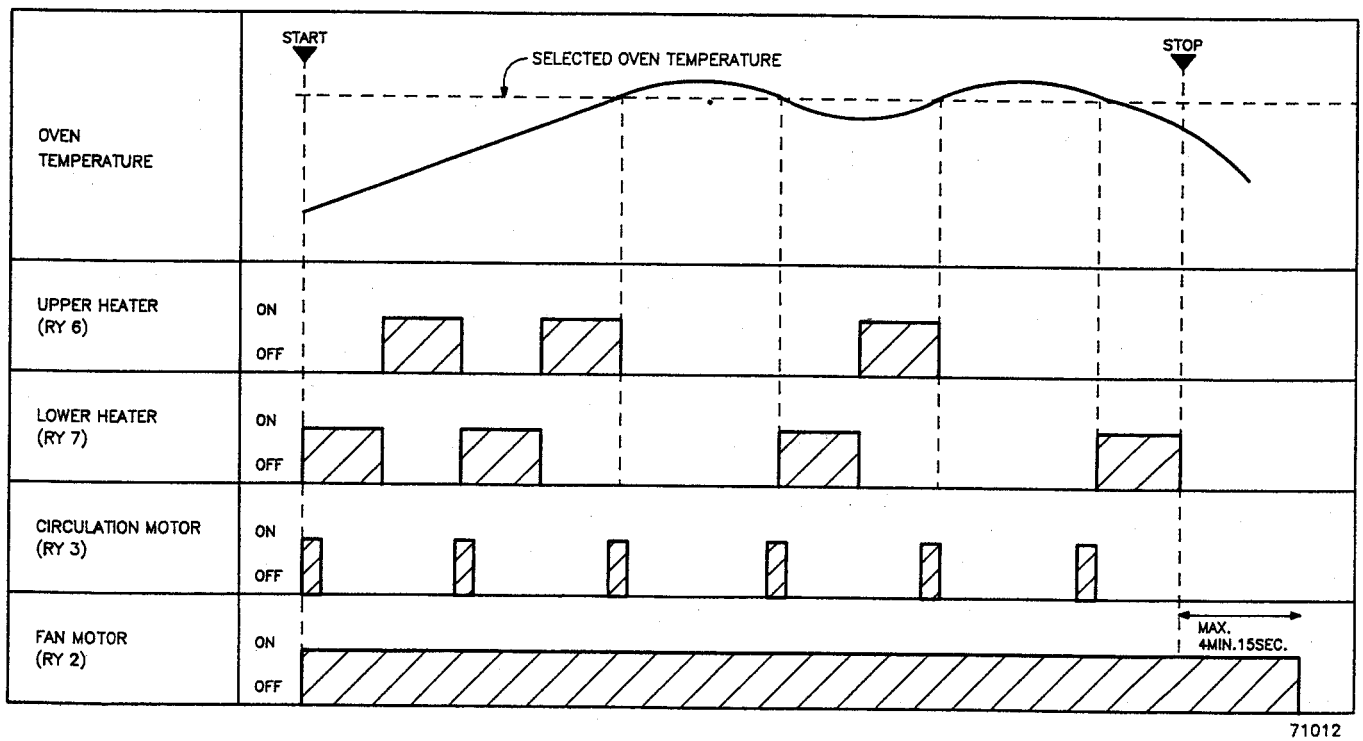
At Preheat Mode:

Selected oven Temperature	UPPER HEATER		LOWER HEATER	
	ON	OFF	ON	OFF
40°C	3	63	4	62
100°C~150°C	42	24	24	42
160°C~200°C	54	12	12	54
210°C~250°C	66	0	0	66

At Bake Cooking Mode:

Selected oven Temperature	UPPER HEATER		LOWER HEATER	
	ON	OFF	ON	OFF
40°C	3	63	4	62
100°C~180°C	33	33	33	33
190°C~250°C	33	33	33	33

Bake



7. Convection

The digital programmer circuit controls the ON-OFF time of upper and lower heater in order to control the oven cavity temperature, see table and figure.

(A) The digital programmer circuit generates the power relay 6 and 7 control signals at a specific timing as shown in table.

(B) When the oven reaches the selected temperature, the digital programmer circuit senses the temperature through oven temp sensor and stops supplying 18V DC to the power relays 6 and 7 resulting in turn off of upper and lower heaters. After the heaters have been turned off, the oven temperature will continue to increase a while then decrease as shown in figure.

(C) When the oven temperature drops below selected temperature, the digital programmer circuit senses the oven temperature and starts supplying 18V DC to the coils of power relays 6 and 7 alternately again.

NOTE 1: ON-OFF time of upper heater and lower heater vary depending on the selected oven temperature as shown in table. When convection is selected with temperature setting of 100-250°C, off period of both heaters is also programmed while oven temperature is lower than selected temperature, as shown in figure.

NOTE 2: After convection process, if oven temperature is higher than predetermind temperature, fan motor rotates for 4 minutes 15 seconds at maximum time to cool the electric components and oven.

Heater ON-OFF Time for Convection Cooking

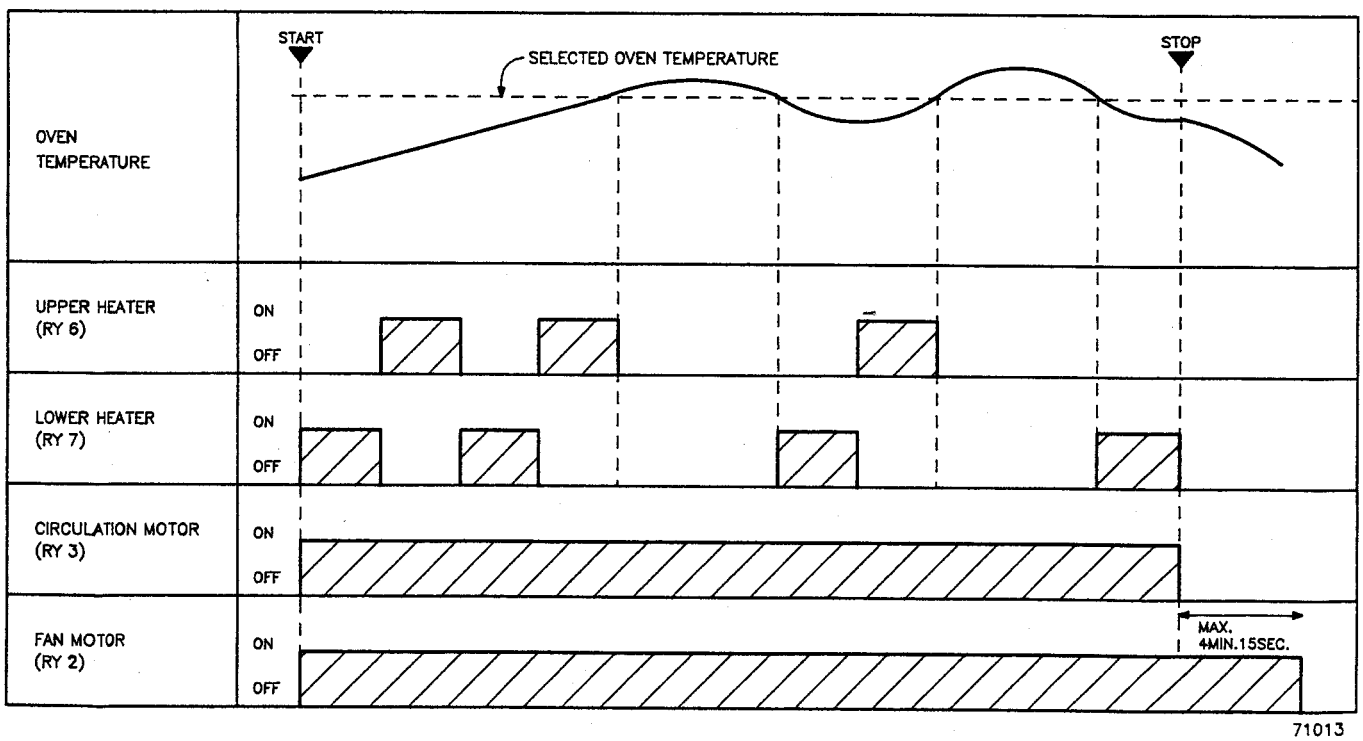
At Preheat Mode:

Selected oven Temperature	UPPER HEATER		LOWER HEATER	
	ON	OFF	ON	OFF
100°C~150°C	42	24	24	42
160°C~200°C	54	12	12	54
210°C~250°C	66	0	0	66

At Convection Cooking Mode:

Selected oven temperature	UPPER HEATER		LOWER HEATER	
	ON	OFF	ON	OFF
100°C~180°C	33	33	33	33
190°C~250°C	33	33	33	33

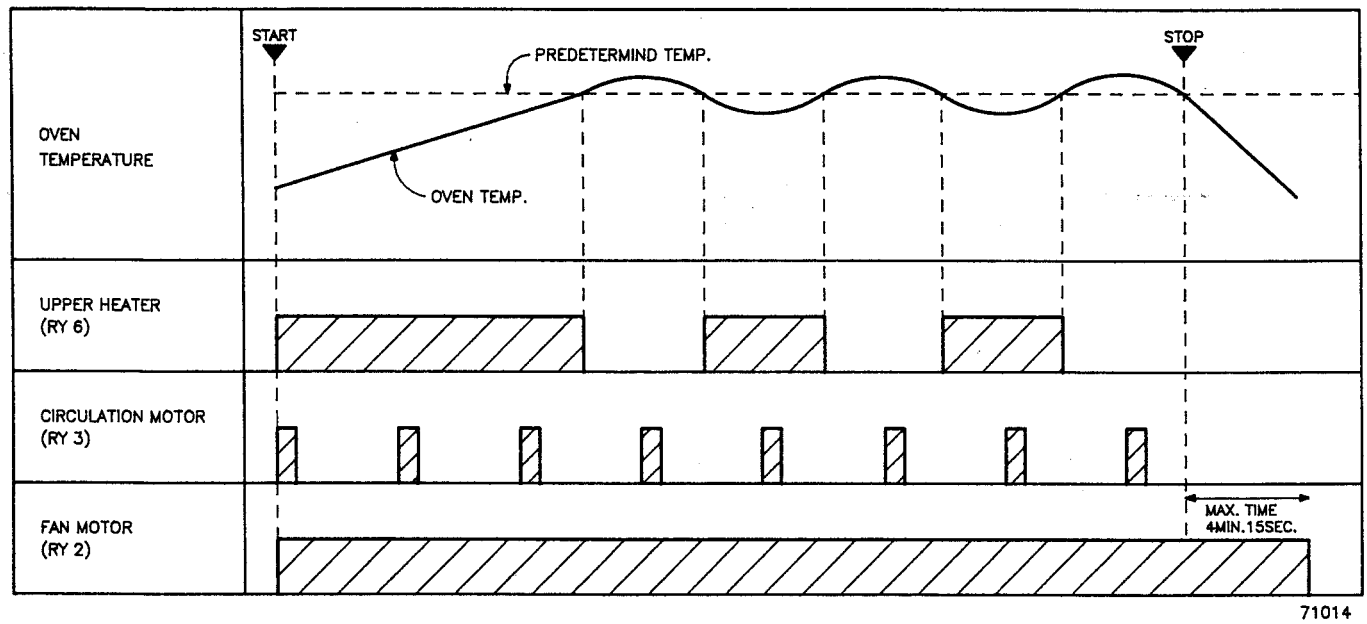
Convection



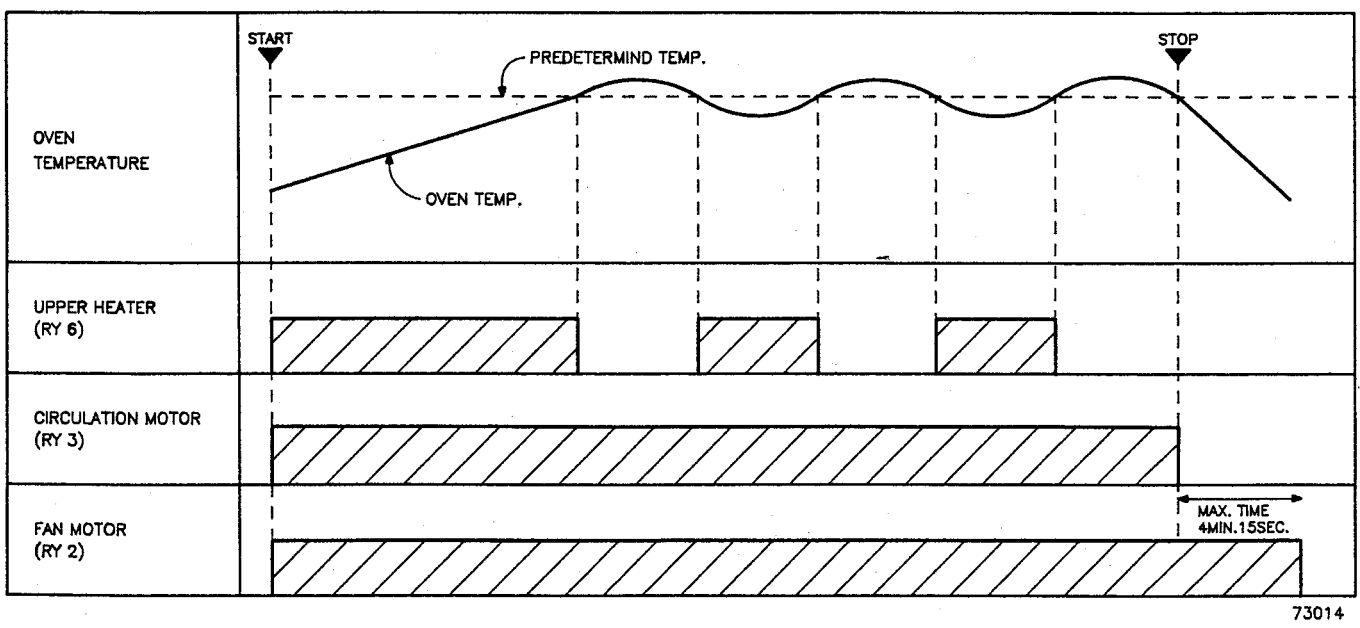
8. Grill and fan forced grill cooking control

(A) The digital programmer circuit generates the power relay 6 control signals at a specific timing as shown in figure.
(B) When the oven temperature reaches the predetermined temperature, the digital programmer circuit stops supplying power relay 6 control signals resulting in upper heater to turn off.
(C) When the oven temperature drops below the predetermined temperature, the digital programmer circuit generates power relay 6 control signals again at the timing predetermined.
NOTE 1: After grill process, if oven temperature is higher than predetermind temperature, fan motor rotates for 4 minutes 15 seconds at maximum time to cool the electric components and oven.

Grill Cooking (Category 1)



Fan Forced Grill Cooking



9. Combination cooking control

Combination cooking is accomplished by operating the microwave and heater mode alternately during one combination cooking cycle.
There are 3 combination mode:

1. Grill combination (Grill + Microwave)
2. Bake combination (Bake + Microwave)
3. Convection combination (Convection + Microwave)

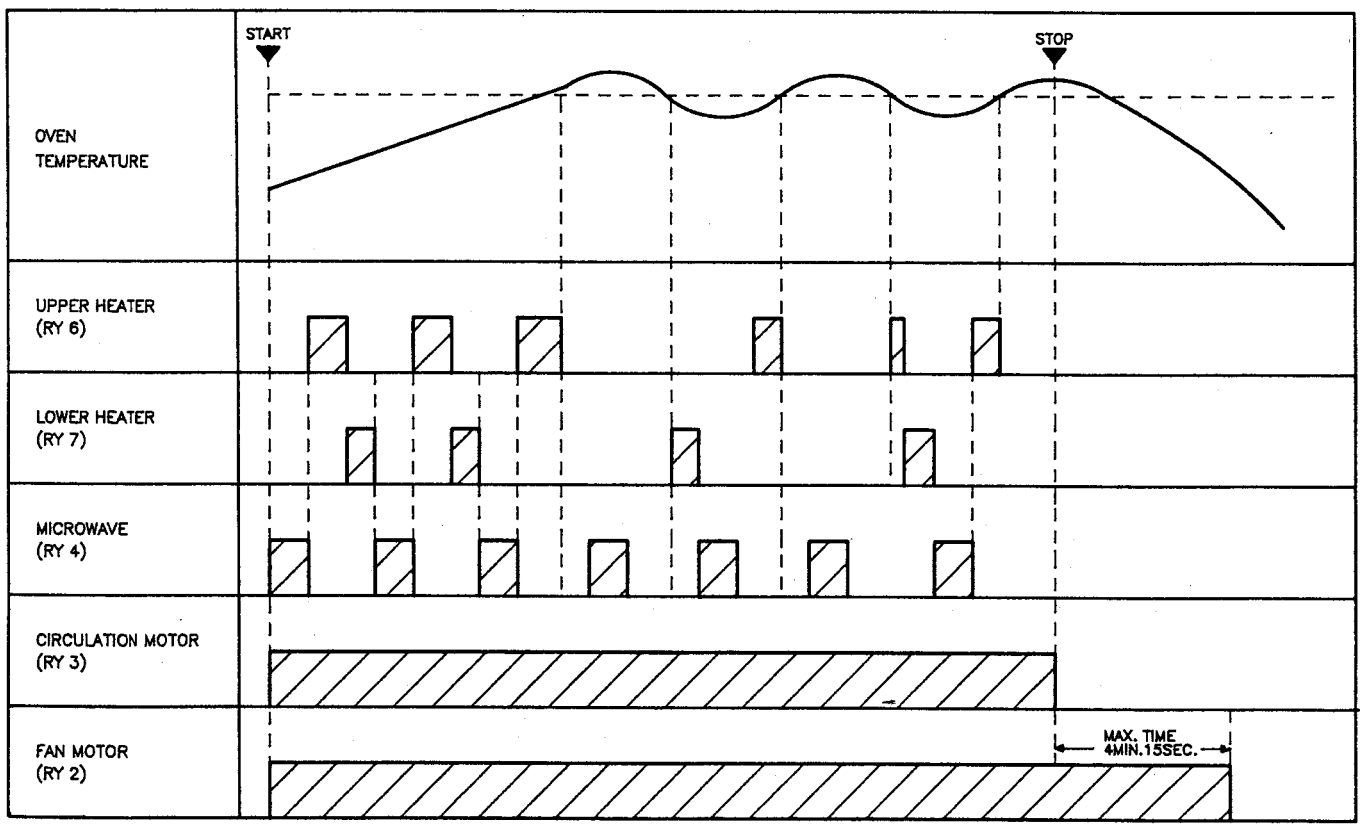
(A) The digital programmer circuit generates the power relay 4, 6 and 7 control signals at a specific timing as shown in figure.

(B) When the oven temperature reaches the predetermined temperature, the digital programmer circuit stops supplying power relay 6 and 7 control signals resulting in both upper and lower heaters to turn off. During this, digital programmer circuit continues supplying power relay 4 control signal so that microwave activity continue at predetermined duty ratio as shown in figure. The microwave activity continue to cycle until entire cooking programme is completed.

(C) When the oven temperature drops below the selected temperature, the digital programmer circuit generates power relay 6 and 7 control signals again at the timing predetermined.

NOTE 1: After combination process, if oven temperature is higher than predetermind temperature, fan motor rotates for 4 minutes 15 seconds at maximum time to cool the electric components and oven.

Combination Cooking (Convection Combination)



CAUTIONS TO BE OBSERVED WHEN TROUBLESHOOTING

Unlike many other appliances, the microwave oven is high voltage, high current equipment.
Though it is free from danger in ordinary use, extreme care should be taken during repair.

CAUTION
Servicemen should remove their watches whenever working close to or replacing the magnetron.

1. Check the earthing

Do not operate on a 2 wire extension cord. The microwave oven is designed to be used in a completely earthed condition. It is imperative, therefore, to make sure it is properly earthed before beginning repair work.

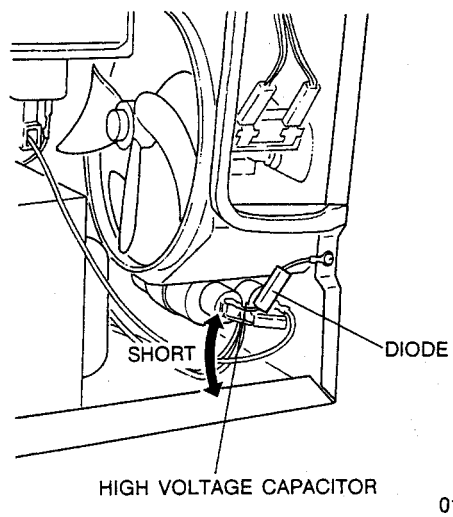
2. If the door lock, the door switch, the door seal or the door develops a malfunction, be sure not to operate the oven until complete repairs are made.

If the oven is operated with any of these parts in imperfect condition, hazardous microwave leakage might occur.

WARNING
Never operate the oven until the following are confirmed:
(A) The door is tightly closed.
(B) There is no broken hinge or door arm.
(C) The door seal is not damaged.
(D) The door is not bent or warped.
(E) There is no other visible damage.

3. Warning about the electric charge in the high voltage capacitor.

For about 30 seconds after the oven is turned off, an electric charge remains in the high voltage capacitor. When replacing or checking parts, remove the power plug from the outlet, wait 30 seconds and short the terminal of the high voltage capacitor (terminal of lead wire from diode) to chassis ground with an insulated jumper lead wire or an insulated handle screwdriver to discharge.



Touch chassis side first then short to the high voltage capacitor terminal.

Important Note
1. High voltage above 250 volts are existing on following parts during operation.
   *Magnetron
   *High Voltage Transformer
   *High Voltage Diode
   *High Voltage Capacitor
   Unusual attention should be paid during repair or troubleshooting of product.
2. If the microwave oven is operated with incorrect installed door hinge or magnetron, it can cause microwave leakage of over 5mW/cm^2.
   Hence it is absolutely necessary to check if magnetron and door hinge are correctly and safely installed after repairs or replacement.

WARNING
Never touch any circuit wiring with your hand nor with an insulated tool during operation.

4. When parts must be replaced, always remove the power plug from the outlet, and discharge the high voltage capacitor.

5. Confirm after repair

(A) After repair or replacement of parts, make sure that the screws of the oven, etc. are neither loose nor missing.
Microwave might leak if screws are not properly tightened.
(B) Make sure that all electrical connections are tight before inserting the plug into the wall outlet.

6. Avoid inserting nails, wire, etc. through holes in unit during operation.

Never insert a wire, nail or any other metal object through the lamp holes on the cavity or any other holes or gaps, because such objects may work as an antenna and cause microwave leakage.

7.

CAUTION
MICROWAVE RADIATION
Personnel should not be exposed to the microwave energy which may radiate from the magnetron or other microwave generating device if it is improperly used or connected all input and output microwave connections waveguides, flanges, and gasket must be secure. Never operate the device without a microwave energy absorbing load attached. Never look into an open waveguide or antenna while the device is energized.

8.

CAUTION
High voltage parts may become uncovered when outer cabinet is removed.

SÄKERHETSÅTGÄRDER ATT TAGA HÄNSYN TILL VID FELSÖKNING OCH REPARATION

Till skillnad fran andra apparater har mikrovågsugnar högspänningstarkströmsutrustning.
Även om ugnen är helt säker vid normalt bruk, skall största försiktighet vidtagas vid reparation.

VARNING
Vid reparation i närheten, eller vid byte av magnetron, skall armbandsur avtagas.

1. Kontroll av jordning.

Använd ej en 2-ledad anslutningssladd. Mikrovågsugnen är tillverkad så att den skall användas jordad. Tillse därföratt ugnen är ordentligt jordad innan arbetet påbörjas.

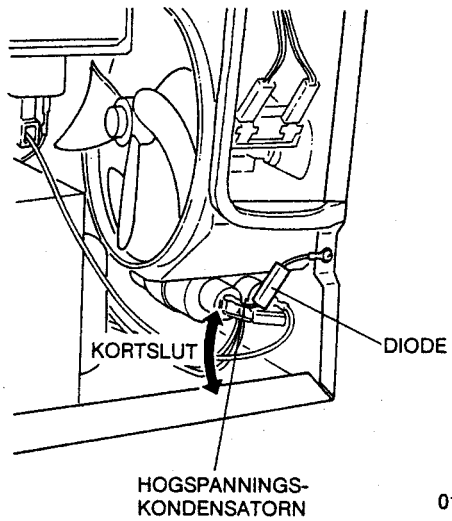
2. Om dörrlåset, dörromkopplaren eller dörrtillslutningen visar någon felaktighet, använd ej ugnen innan felet är avhjälpt.

Om ugnen används när något av dessa fel har uppstått kan ev. Mikrovågsläckage uppstå.

VARNING
Sätt aldrig på ugnen innan följande har kontrollerats:
(A) Dörren är ordentligt stängd.
(B) Dörrtätningslisten inte är skadad.
(C) Dörren är skev, böjd eller otät.
(D) Gångjärnen är hela.
(E) Att annan synlig skada inte finns.

3. Varning för elektrisk ström I högspänningskondensatorn

CA: 30 sekunder efter det att ugnen stängts av, kvarstår en elektrisk laddning I högspänningskondensatorn. Vid utbyte eller kontroll av delar, stäng av ugnen, vänta I 30 sekunder och kortslut därefter kondensatorn (Anslutningen för ledning från dioden) till ytter höljets jord genom att använda en isolerad kortslutningskabel.



Kontrollera att kortslutningskabeln är jordad till chassit innan högspänningskondensatorn kortslutes

VIKTIGT
1. Under drift finns spänning överstigande 250V i apparaten på följande ställen:
   *Magnetronen
   *Högspänningstransformatorn
   *Högspänningsdioden
   *Högspänningskondensatorn
   Stor försiktighet skall iakttagas under felsökning och reparation.
2. Om ugnen används med felaktigt installerad dörr och/eller magnetron kan mikrovågsläckage överstigande 5mW/cm² uppträda. Följaktligen är det absolut nödvändigt att kontrollera att dörr och/eller magnetron är korrekt och säkert installerade efter utbyte eller reparation.

VARNING
Gör inga mätningar i högspänningsdelen eller av glödspänning för magnetronen.

4. Vid byte av delar, tag alltid ur nätkontakten från vägguttaget och urladda högspänningskondensatorerna.

5. Kontroll efter reparation.

(A) Efter reparation eller vid byte av delar tillse att skruvar, flänsar och tätningar ej fattas eller ä lösa. Mikrovågor kan läcka ut om detta ej åtgärdats.
(B) Alla elektriska kopplingar skall < ara väl förbundna innan nätkontakten anslutes.

6. Stoppa aldrig in någon form av metallföremål i håligheter eller springor under det att apparaten är påslagen.

Metallföremål kan fungera som antenn och förorsaka mikrovågs läckage.

7.

VARNING
för
MIKROVÅGSSTRÅLNING.
Mikrovågsenergi kan stråla från magnetronen eller från annan mikrovågsgenererande anordning om den används eller ansluts felaktigt. Alla anslutningar för mikrovåg, såsom flänsar och tätningar måste vara betryggande ur säkerhetssynpunkt. Starta aldrig anorningen utan mikrovågsabsorberande belastning. Mikrovågsstrålning från en öppen vågledare eller antenn har sådan strålningstäthet att uppenbar skaderisk föreligger.

8.

VARNING
Vid avlägsnande av apparatens ytterhölje friläggs högspänningsföerande delar.

LAITTEEN HUOLLOSSA JA KORJAUKSESSA HUOMIOONOTETTAVIA VAROTOIMENPITEITÄ

Toisin kuin monet muut kotitalouskoneet toimii mikroaaltouuni suurella käyttöjännitteellä ja-virrala.
Vaikkakin uuni on täysin turvallinen normaalikäytössä, on sen korjauksessa noudatettava ehdottomasti varotoimenpiteitä.

VAROITUS
Magnetronia vaihdettaessa tai sen läheisyydessä työskenneltäessä tulee rannekello irroittaa.

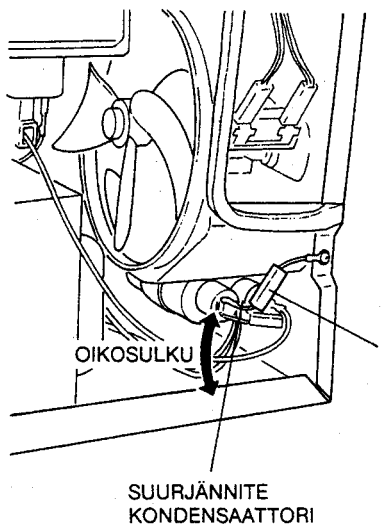
1. Jos uunin oven lukkoon, sen kytkimeen tai tiivisteisiin tai itse oveen tulee jokin vika, ei uunia saa käyttää ennenkuin vika on korjattu.

Jos uunia käytetään oven tai sen jonkin osan ollessa vioittunut, saattaa tapahtua vaarallista mikroaaltovuotoa.

VAROITUS
Ennen uunin käynnistämistä on aina ensin tarkistettava että:
(A) Uunin ovi on suljettu kunnolla.
(B) Oven tiivistyslistat eivät ole vahingoittuneet.
(C) Ovi ei ole vino, vääntynyt tai epätiivis.
(D) Oven saranat ovat ehjät.
(E) Ettei uuni ole mitenkään näkyvästi vaurioitunut

2. Huom! Sähkö varautuu korkeajännitekondensaattoriin.

Kun uuni on kytketty OFF-asentoon jää sähkövaraus korkeajännitekondensaattoriin noin 30:neksi sekunniksi. Kun asennat tai tarkistat uunin osia kytke uuni OFF-asentoon, odota 30 sekuntia ja oikosulje korkeajännitekondensaattorin kosketin (Diodin liitosjohtimen pääte) kojeiston runkoa vasten eristetyllä "hyppylangalla".



01-003

Varmistakaa että hyppylanka on maadoitettu laitteen rungon sivuun ennen suurjännite kondensaattorin päätteen oikosulkemista

Tärkeä varoitus
1. Laitteen toimiessa seuraavissa osissa on yli 250 V suurjännite.
   *Magnetroni
   *Suurjännitemuuntaja
   *Suurjännitediodi
   *Suurjännitekondensaattori
   Laitteen korjaamisessa täytyy siksi olla erityisen varovainen.
2. Uunin väärin asennettu luukku tai magnetroni voi aiheuttaa mikroaaltovuotoa, joka ylittää 5 mW/cm². Tämän vuoksi korjauksen ja osien vaihdon jälkeen on ehdottomasti tarkastettava magnetronin ja uuniluukun oikea asennus.

VAROITUS
Magnetronin hehkujännitettä tai sen suurjänniteosan jännitettä ei saa mitata.

3. Kun laitteeseen vaihdetaan osia on virtajohdin aina irroitettava seinästä ja korkeajännitekondensaattorien jännite purettava.

4. Tarkistukset korjaustöiden jälkeen.

(A) Korjauksen tai osien vaihdon jälkeen on tarkistettava että kaikki ruuvit, laipat ja tiivisteet ovat paikallaan ja kiristettyinä. Mikroaallot saattavat vuotaa löysistä liitoksista.
(B) Kaikki sähköiset liitännät on suoritettava ennen virran kytkemistä.

5. Uunin kotelon reikiin tai aukkoihin ei saa työntää mitään metalliesineitä uunin ollessa käytössä.

Metalliesineet voivat toimia antenneina ja aiheuttaa mikroaaltovuotoa.

6.

MIKROAALTOSÄTEILYÄ
Käyttäjä ei saa joutua alttiiksi mikroaaltoenergialle, jota voi säteillä magnetronista tai muusta mikroaaltoja kehittävästä laitteesta, jos sitä käytetään väärin tai jos se kytketään väärin. Kaikkien mikroaaltoliitäntöjen sekä syöttö-että ulostulopuolella, aaltoputkien laippojen ja tiivisteiden tulee olla varmistettuja. Mikroaaltouunia ei koskaan saa käyttää ilman kuormaa jossa mikroaaltoenergiaa kuluu. Avoimeen aaltoputkeen tai antenniin ei koskaan saa katsoa virran ollessa kytkettynä.

7.

VAROITUS
Irroitettaessa uunin kotelo paljastuu osia joissa on korkea jännite.

SIKKERHETSTILTAK SOM MÅ TAS HENSYN TIL VED FEILSØKING OG REPARASJON

I motsetning til annet kjøkkenutstyr har mikrobølgeovnen høyspenning, sterkstrømsutstyr. Selvom ovnen er helt sikker ved normal bruk, må man være spesielt forsiktig ved reparasjon.

ADVARSEL
Ved reparasjon i nærheten, eller ved bytte av magnetron skal armbåndsur tas av.

1. Kontroll av jording.

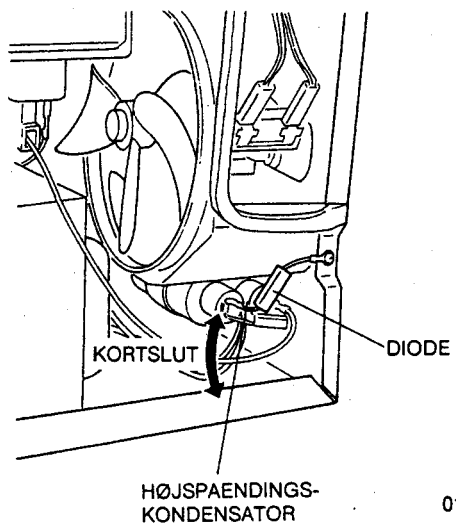
Bpuk ikke 2-lederkabel, mikrobølgeovnen er laget slik at den skal jordes. Pass derfor på at ovnen er skikkelig jordet før arbeidet påbegynnes.

2. Om det finnes feil på dørlås, dørbryter eller dørtetning må ikke ovnen brukes før feilen er rettet. I motsatt fall kan mikrobølgelekkasje oppstå.

ADVARSEL
Bruk aldri ovnen før følgende er kontrollert:
A. Døren er ordentlig stengt.
B. Dørtetningslisten ikke er skadet.
C. Døren er skjev, bøyd eller utett.
D. Gangjernene er hele.
E. At det ikke er annen synlig skade.

3. Advarsel vedrørende elektrisk ladning i høyspenning kondensatoren.

Ca. 30 sekunder etter at ovnen er slått av, vil det fortsatt være igjen en elektrisk ladning i høyspenning kondensatoren. Ved kontroll eller skifting av deler, slå av ovnen, vent 30 sekunder og kortslutt høyspenning kondensatoren (Sammenkoblingspunkt for ledning fra dioden) til chassis med en isolert ledning som vist på **Fig. 15.**



Vaer sikker på att kortslutningskabeln er jordet til chassis før kortsluttning av høyspenningskondensatoren

Advarsel
1. Høyspenning over 250 volt finnes på følgende deler under drift:
   *Magnetron
   *Høyspenningstransformator
   *Høyspenningslikeretter
   *Høyspenningskondensator
   Vær spesielt oppmerksom under arbeid med disse delene.
2. Hvis mikrobølgeovnen blir brukt med feil montert dørhengsler eller magnetron, kan dette forårsake lekkasje av mikrobølgestråling på mer enn 5mW/cm². Derfor er det absolutt påkrevet å kontrollere at dørhengsler og magnetron er korrekt montert etter reparasjon eller utskifting.

ADVARSEL
Foreta aldri målinger i høyspenningsdelen eller glødespenningen for magnetronen.

4. Ved utskifting av deler, fjern alltid støpslet fra kontakten og kortslutt høyspenningskondensatorene.

5. Kontroller etter reparasjon:

(A) At skruer, flenser og tetninger ikke mangler eller er løse. Mikrobølger kan ellers lekke ut.
(B) At alle elektriske koblinger er iorden før kontakten settes i.

6. Putt aldri metallgjenstander inn i hull eller sprekker mens ovnen er tilkoblet.

Slike kan virke som antenne og forårsake mikrobølgelekkasje.

7.

ADVARSEL MOT MIKROBØLGESTRALING
Personer må aldri utsettes for stråling av mikrobølgeenergi. Alle tilkoblinger for mikrobølger, som flenser og tetninger må være sikkerhetsmessig betryggende utført. Start aldri apparatet uten mikrobølgeabsorberende belastning. Mikrobølgestråling fra åpen bølgeleder eller antenne har så stor strålingstetthet at det er stor risiko for skadevirkninger.

8.

ADVARSEL
Når ytterdekslet fjernes blir høyspenningsførende deler tilgjengelige.

SIKKERHEDSFORSKRIFTER VED FEJLFINDING OG REPARATION

I modsætning til mange andre elektriske apparater arbejder mikrobølgeovne ved høje spændinger og store strømme.
Selv om en mikrobølgeovn er fuldstændig sikker ved normal brug, skal reparation foretages med højeste forsigtighed.

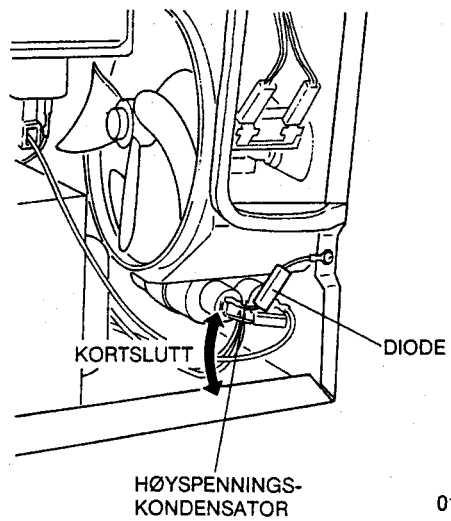
ADVARSEL
Tag Deres armbåndsur af, hvis De skal arbejde i nærheden af eller udskifte magnetronen.

1. Kontrol af jordforbindelse
Tilslut ikke ovnen ved hjælp af et 2-leder kabel. Mikrobølgeovnen er konstrueret til at arbejde med jordforbindelse. Se derfor efter at ovnen er forsvarligt jordet, før reparationen påbegyndes.

2. Hvis der er fejl ved låsen til ovndøren, omskifteren for døren eller tætningen af døren, må ovnen ikke anvendes, før fejlen er afhjulpet.
Hvis ovnen bruges, uden at sådanne fejl er afhjulpet, er der risiko for udstråling af mikrobølger.

ADVARSEL
Tænd aldrig for ovnen, før De har kontrolleret, at
(A) Døren er forsvarligt lukket,
(B) Tætningslisten omkring døren ikke er beskadiget,
(C) Ovndøren ikke er skæv, bøjet eller utæt,
(D) Hængslerne er hele, og
(E) Der ikke findes andre synlige beskadigelser.

3. Advarsel om opladning af højspændingskondensatoren
Indtil omkring 30 sekunder efter at ovnen er afbrudt, vil højspændingskondensatoren stadig være opladet. Afbryd ovnen, når De skal udskifte eller kontrollere komponenter, vent 30 sekunder og kortslut højspændingskondensatorens ene tilslutning (Tilslutning for ledning fra dioden) til chassiset med et isoleret stykke ledning.



Kortslutningstråden skal vaere stelforbundet før højspaendingskondensatoren kortsluttes

VIGTIGT
1) Følgende komponenter bærer højspænding (over 250 volt) under drift:
*Magnetron
*Højspændingstransformator
*Højspændingsensretter
*Højspændingskondensator
Extra opmærksomhed bør udvises ved reparation/fejlfinding.
2) Såfremt ovnen betjenes med forket monteret dørhængsel eller magnetron, vil der være risiko for mikrobølgelækage over 5mW/cm².
Det er derfor bydende nødvendigt at kontrollere disse komponenter efter endt reparation/udskiftning.

ADVARSEL
Undgå at berøre kredsløbene, hverken med hånden eller med isoleret værktøj, mens ovnen er i gang.

4. Hvis det er nødvendigt at udskifte komponenter, skal De altid fjerne netstikket fra stikkontakten og aflade højspændingskondensatorerne.

5. Kontrol efter reparation
(A) Efter reparation eller udskiftning af komponenter må De se efter, at alle skruer og tætningslister er på plads og fastspændt.
Der kan opstå lækage af mikrobølger, hvis skruerne ikke er forsvarligt strammet.
(B) Alle elektriske forbindelser skal være i orden, før De sætter netstikket i stikkontakten.

6. Sæt under ingen omstændigheder metalgenstande i åbninger på apparatet, mens det er i gang.
Metalgenstande kan virke som antenner og forårsage lækage af mikrobølger.

7.

FORSIGTIG
MIKROBØLGEUDSTRÅLING
Personer må ikke udsættes for mikrobølgeenergi, som kan udstråles fra magnetronen eller anden mikrobølgegenerator, hvis den er forkert anvendt eller forbundet. Alle mikrobølgeforbindelser, bølgeledere, flanger og pakninger skal være sikre. Tilslut aldrig apparatet uden en belastning, som kan absorbere mikrobølgeenergi. Se aldrig ind I en åben bølgeleder eller antenne, mens apparatet er I gang. Mikrobølgestrålingen fra en åben bølgeleder eller antenne har så stor intensitet, at der er overhængende risiko for skader.

8.

ADVARSEL
Når apparatets kabinet aftages, bliver der adgang til dele med højspænding.

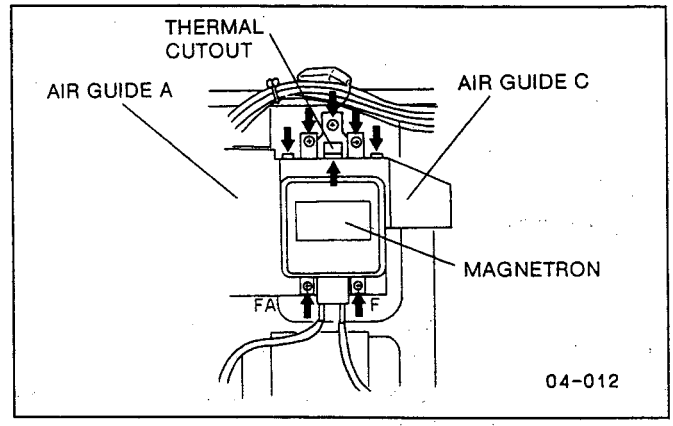
DISASSEMBLY AND PARTS REPLACEMENT PROCEDURE

1. Magnetron

(A) Discharge the high voltage capacitor.
(B) Remove 2 screws holding the air guide A and C.
(C) Remove 2 screws holding the thermal cutout.
(D) Disconnect 2 high voltage leads from filament terminals. (F, FA)
(E) Remove 4 screws holding the magnetron.
NOTE: To prevent microwave leakage, tighten mounting screws properly making sure there is no gap between the waveguide and the magnetron.

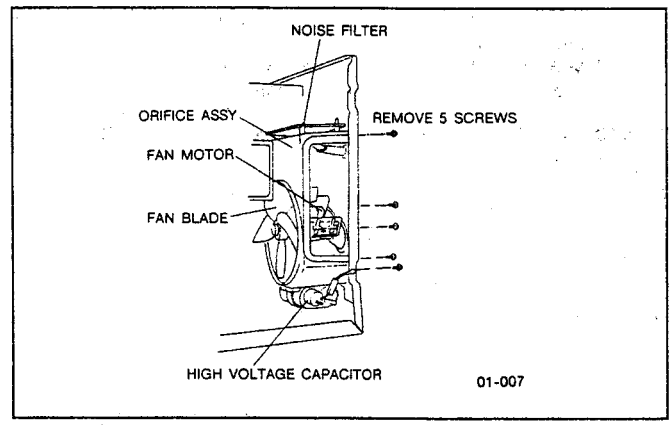
CAUTION
When replacing the magnetron, be sure the antenna gasket is in place.

CAUTION
When connecting 2 filament lead wires to the magnetron terminals, be sure to connect the lead wires in the correct position. The lead wire of high voltage transformer should be connected to "FA terminal" and the lead wire from high voltage capacitor should be connected to "F terminal".



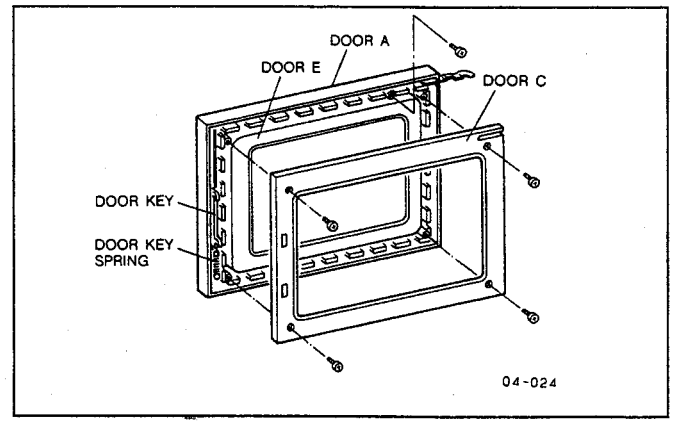
2. Fan motor and high voltage capacitor

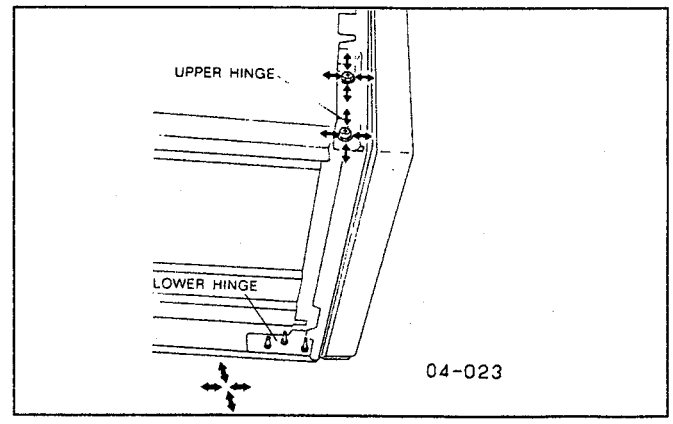
(A) Remove the noise filter by freeing catch hooks.
(B) Remove 1 screw holding air guide C.
(C) Disconnect all lead wires from fan motor and high voltage capacitor.
(D) Remove 5 screws holding the fan motor and orifice assy and detach the orifice assy with fan motor and high voltage capacitor from oven assy.
(E) Remove the fan blade from the fan motor shaft by pulling it straight out.
(F) Separate the fan motor from the orifice assy by freeing catch hooks.
To replace high voltage capacitor
(G) Remove 1 screw holding the high voltage capacitor.



3. Door assembly

(A) Remove 2 screws holding the upper hinge to the oven.
(B) Open the door and while pulling the door toward you, work the upper hinge out through the hole in the oven.
(C) Remove 4 screws holding the door C.
(D) Remove the door C by carefully pulling outward starting from the upper right hand corner.
(E) Remove the door key spring and the door key.
(F) Remove 1 screw holding door A and door E.
(G) Separate the door A from door E by carefully freeing catch hooks on door A while pulling outward.
(H) When mounting the door to the oven, be sure to adjust the door parallel to the bottom line of the oven face plate by moving the upper hinge and lower hinge in the direction necessary for proper alignment.
Also adjust so that the door has no play between the inner door surface and oven frame. If the door is not mounted properly, microwave may leak from the clearance between the door and the oven.
(I) Perform the microwave leakage test after replacing or adjusting any oven door part.





4. Digital programmer circuit (DPC) and membrane key board.

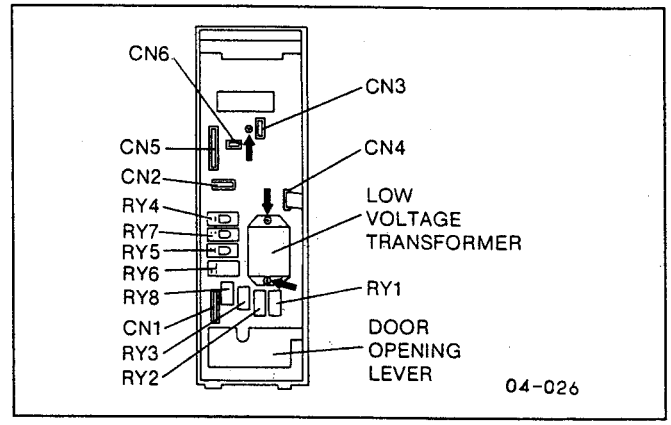
NOTE: Be sure to ground any static electric charge built up on your body, before handling the DPC.

(A) Disconnect all connectors from DPC.
(B) Remove 3 screws holding escutcheon base and slide the escutcheon base upward slightly.
(C) Remove 3 screws holding DPC.

To replace membrane key board

(D) Remove door opening lever.
(E) Remove escutcheon bracket from escutcheon base by freeing 4 catch hooks.
(F) Peel off tub of membrane key board.
(G) Push the upper part of key board (display window) from back of escutcheon base and peel off membrane key board.

NOTE:1. The membrane key board is attached to the escutcheon bracket with double faced adhesive tape.
2. When installing new membrane key board, make sure that the surface of escutcheon bracket is cleaned sufficiently so that any problems (shorted contacts or uneven surface) can be avoided.
3. Make sure that new membrane key board is aligned to the right and upper edges of the escutcheon bracket.



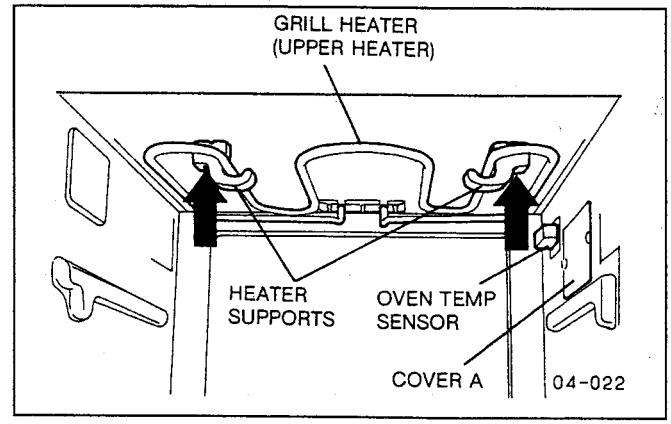
5. Replacement of the low voltage transformer and/or power relays

NOTE: Be sure to ground any static electric charge built up on your body before handling the D.P.C.

(A) Using solder wick or a desoldering tool and 30W soldering iron, carefully remove all solder from the terminal pins of the low voltage transformer or power relays.

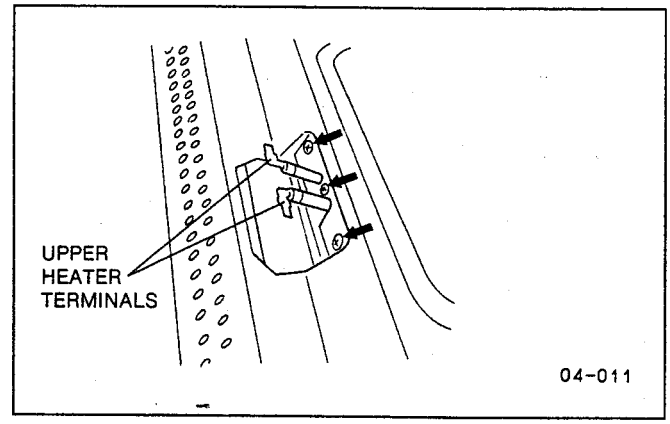
NOTE: Do not use a soldering iron or desoldering tool of more than 30 watts on D.P.C. board.

(B) With all the terminal pins cleaned and separated from D.P.C. contacts, remove the defective transformer/power relay and install new transformer/power relay making sure all terminal pins are inserted completely. Resolder all terminal contacts carefully.



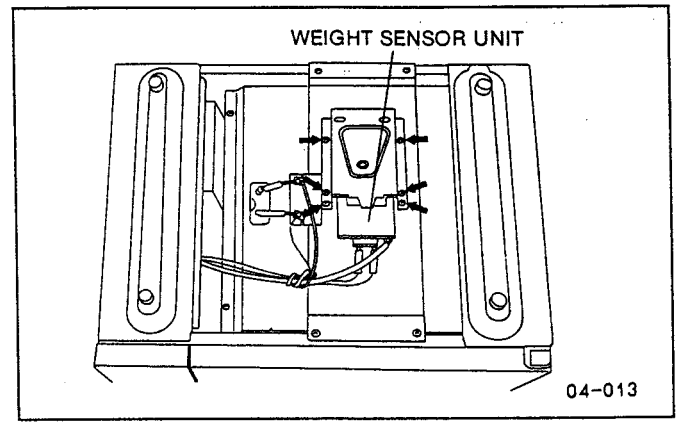
6. Upper heater

(A) Disconnect lead wires from upper heater terminals.
(B) Remove 2 screws holding upper heater supports.
(C) Remove 3 screws holding upper heater.



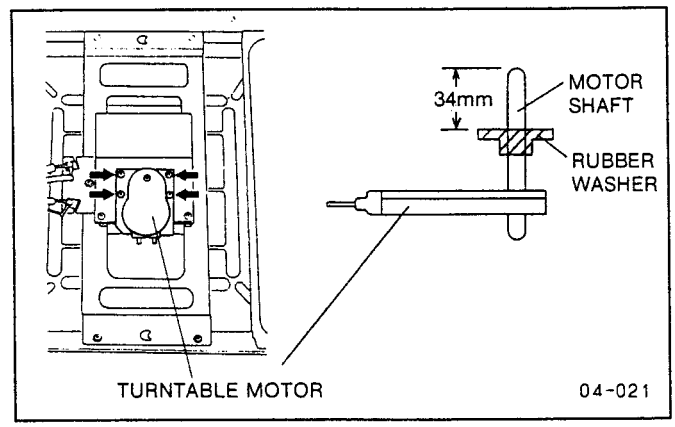
7. Weight sensor and turntable motor (NN-D801, NN-D851)

(A) Carefully turn the oven up side down.
(B) Remove 2 screws holding base C.
(C) Disconnect lead wire connectors from weight sensor unit.
(D) Remove 6 screws holding weight sensor.
To replace turntable motor
(E) Disconnect lead wire connectors from turntable motor.
(F) Remove 4 screws holding turntable motor.
NOTE: 1. When replacing the weight sensor unit or turntable motor, make sure adjust weight sensor 0 gram balance. (See component test procedure)
2. When replacing the turntable motor, make sure the rubber washer is correctly in place.



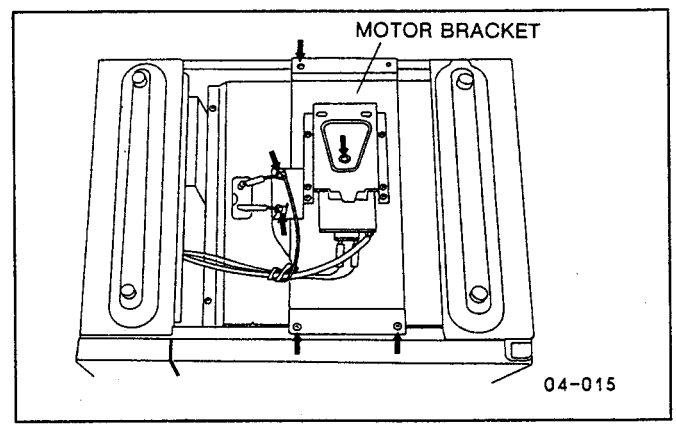
8. Turntable motor (NN-D501,NN-D551)

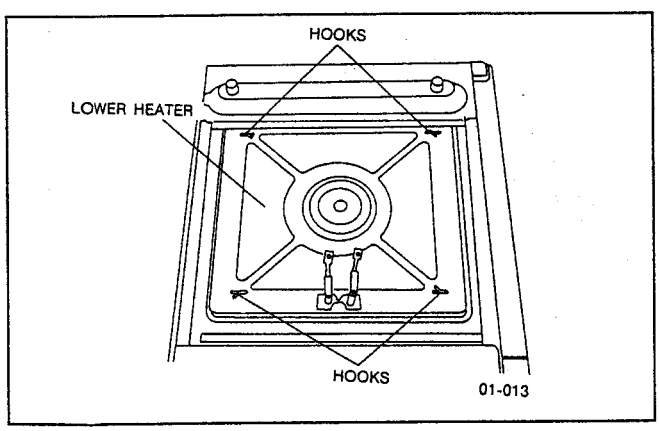
(A) Carefully turn the oven up side down.
(B) Remove 2 screws holding base C.
(C) Disconnect lead wire connectors from turntable motor.
(D) Remove 4 screws holding motor stoper.
(E) Remove 4 screws holding turntable motor.

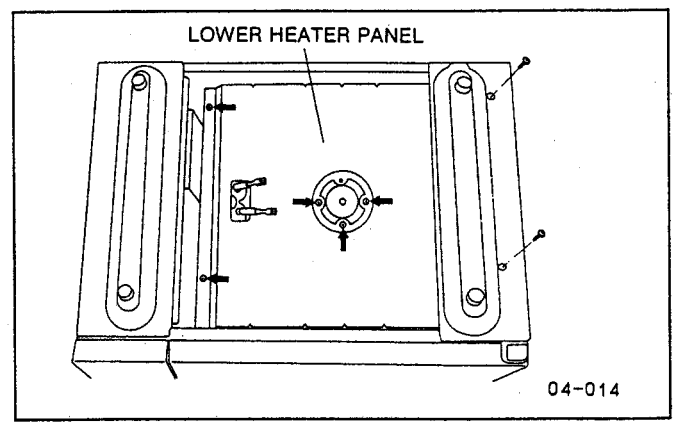


9. Lower heater

(A) Carefully turn the oven up side down.
(B) Remove 2 screws holding base C.
(C) Remove 2 screws from heater terminals.
(D) Remove 4 screws holding motor bracket unit.
(E) Remove 4 screws holding heater panel B.
(F) Remove 3 screws holding heater panel.
(G) Remove heater by freeing 4 catch hooks.

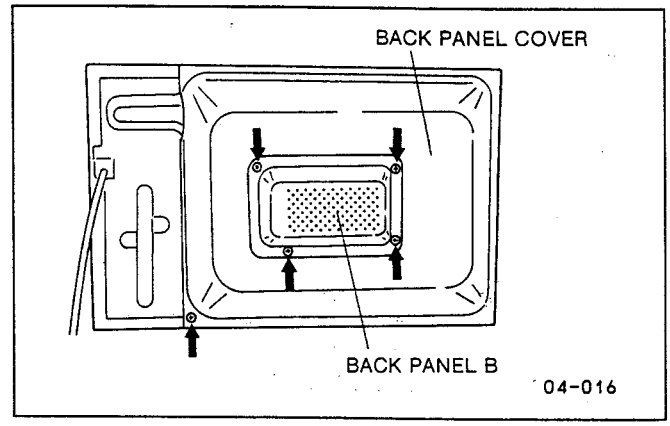


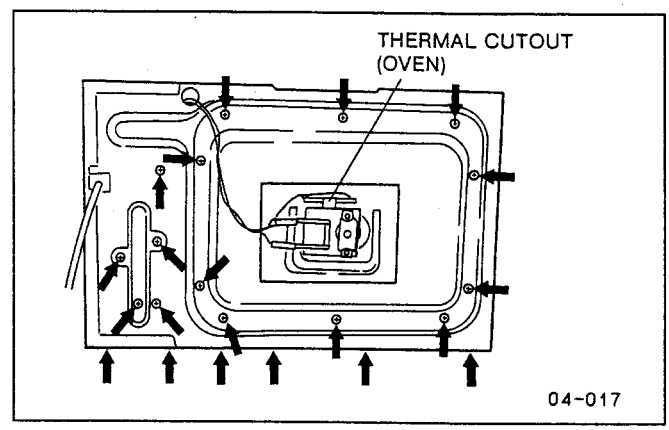


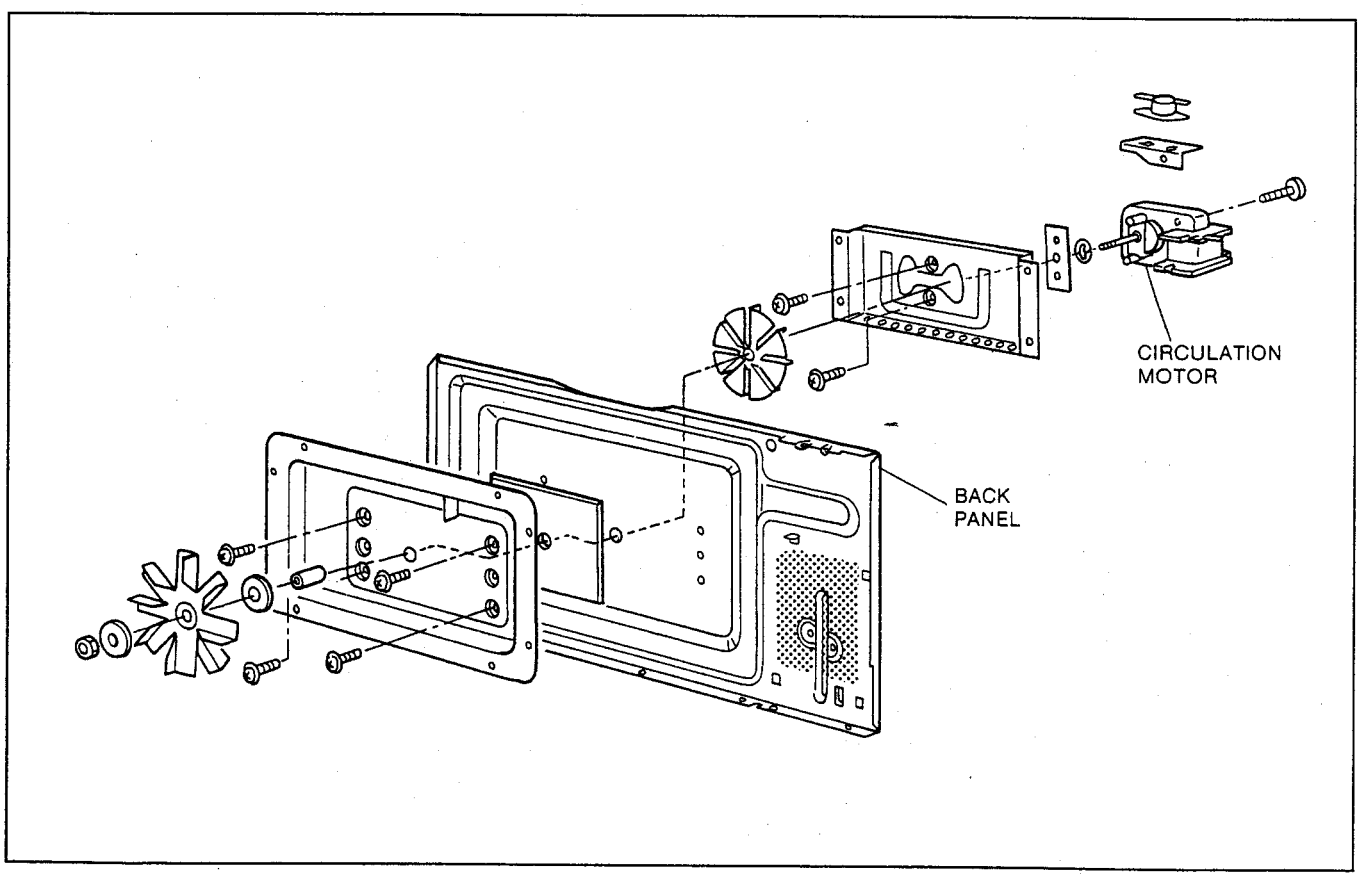


10. Circulation fan motor

(A) Remove 5 screws holding back panel cover.
(B) Disconnect lead wire connectors from motor and thremal cutout.
(C) Remove back panel by removing screws as shown in figure.
(D) Remove a nut from motor shaft.
(E) Remove 4 screws holding motor bracket.
(F) Remove 2 screws holding motor.







COMPONENT TEST PROCEDURE

CAUTION

1. High voltage is present at the high voltage terminal of the high voltage transformer during any cook cycle.
2. It is neither necessary nor advisable to attempt measurement of the high voltage.
3. Before touching any oven components, or wiring, always unplug the oven from its power source and discharge the high voltage capacitor.

1. High voltage transformer

(A) Remove connections from the transformer terminals and check continuity.
(B) Normal (cold) resistance readings should be as follows:

Secondary winding	Approx. 80Ω ~ 120Ω
Filament winding	Approx. 0Ω
Primary winding (0V ~ 230V)	Approx. 0Ω ~ 3Ω

2. High voltage capacitor

(A) Check continuity of capacitor with ohmmeter on highest OHM scale.
(B) A normal capacitor will show continuity for a short time, and then indicate 9MΩ once the capacitor is charged.
(C) A shorted capacitor will show continuous continuity.
(D) An open capacitor will show constant 9MΩ.
((Due to internal 9MΩ resistor))
(E) Resistance between each terminal and chassis should be infinite.

3. Diode

(A) Isolate the diode assembly from the circuit by disconnecting the leads.
(B) With the ohmmeter set on the highest resistance scale, measure the resistance across the diode terminals. Reverse the meter leads and again observe the resistance reading. Meter with 6V, 9V or higher voltage batteries should be used to check the front-to-back resistance of the diode, otherwise an infinite resistance may be read in both directions.
A normal diode's resistance will be infinite in one direction and several hundred KΩ in the other direction.

4. Magnetron

Continuity checks can only indicate an open filament or a shorted magnetron. To diagnose for an open filament or shorted magnetron,
(A) Isolate magnetron from the circuit by disconnecting the leads.
(B) A continuity check across magnetron filament terminals should indicate one ohm or less.
(C) A continuity check between each filament terminal and magnetron case should read open.

5. Membrane key board (Membrane switch assembly)

Check continuity between switch terminals, by pressing an appropriate pad on the key board.
The contacts assignment of the respective pads on the key board is as shown in the schematic diagram of DPC.

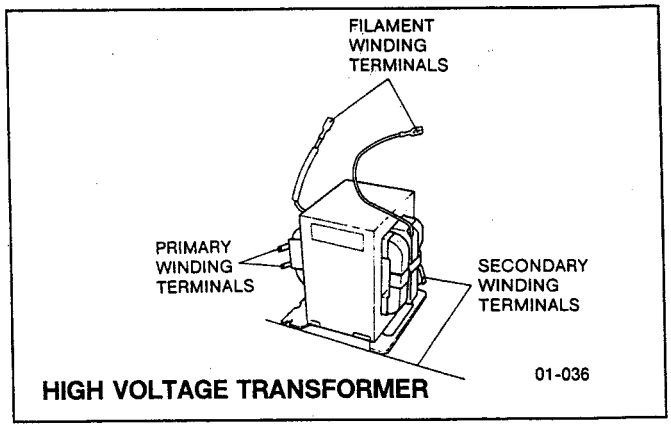
6. Protector diode

(A) Isolate the protector diode assembly from the circuit by disconnecting its leads.
(B) With the ohmmeter set on the highest resistance scale, measure the resistance across the protector diode terminals.
Reverse the meter leads and again observe the resistance reading.
A normal protector diode's resistance will be infinite in both directions.
It is faulty if it shows continuity in one or both directions.

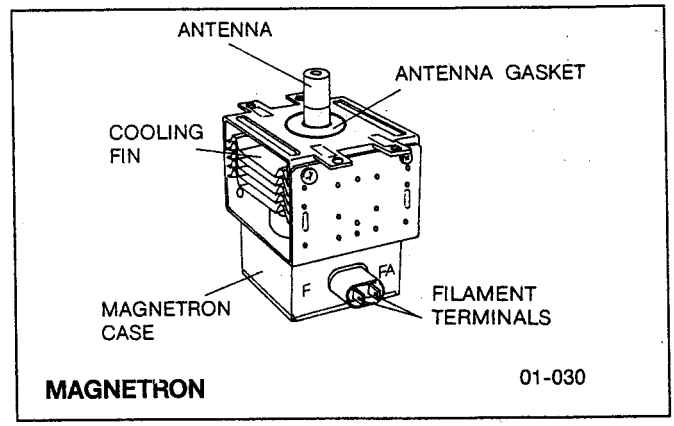
7. To test the oven temp sensor thermistor

This sensor monitors the heat produced by the heater circuit and maintains the oven temperature the user had selected. Normal room temperature, especially in a kitchen can vary anywhere from 10°C to 32°C. The reading across the oven sensor thermistor should be within 360K ohm to 1500K ohm when reading in an area within the 10°C to 32°C room temperature range.
If the resistance reading is out of the range stated here, the sensor is defective and must be replaced with sensor unit.

NOTE 1: When measuring resistance disconnect the 4-pin connector (CN6) from the DPC otherwise a false reading may be indicated.
NOTE 2: If checking an oven sensor thermistor just after the microwave oven has been operating, the sensor of course won't be room temperature. In this case the sensor must be removed and allowed to cool down to the 10°C to 32°C range.



HIGH VOLTAGE TRANSFORMER



MAGNETRON

8. Weight Sensor and Digital Programmer Circuit

WARNING

The Weight sensor unit was carefully assembled and precisely adjusted at the factory using sensitive equipment.
It should not require adjustment for it's volume control following normal usage.

In order to determine if the weight sensor unit functions properly do the following test.

1. Place oven on a flat and stable surface, otherwise inaccurate function may be observed.
2. Place both metal turntable support and glass cooking tray in it's place.
3. Plug the power supply cable into outlet.
4. Place a water load of 500g (Container weight included) in the center of cooking tray.
5. Press Sensor Defrost pad.
6. Press Start pad.
   After approx.10 seconds, the cooking time will appear in the display. The cooking time should be in between as following time.
   14 min. 00 sec. ~ 9 min. 00 sec.

If the cooking time is out of the above range, the weight sensor must be read adjusted to 0 gram balance.

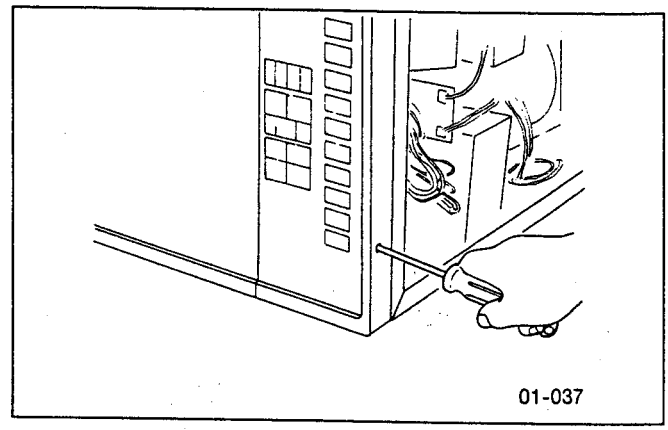
Weight Sensor 0 gram balance adjustment

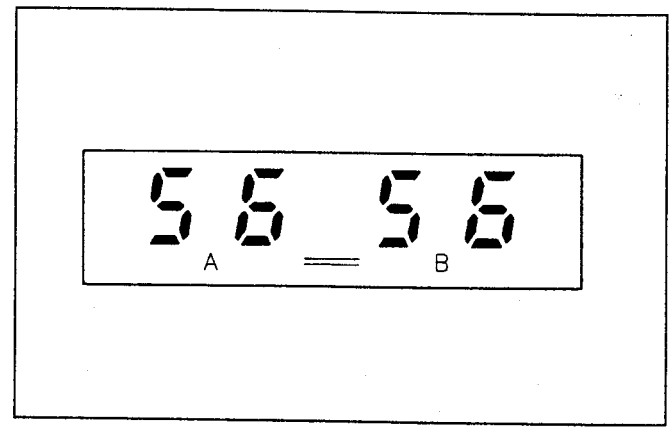
NOTE: For accurate weight sensor operation, you must conduct 0 gram balance adjustment when any components around weight sensor unit such as metal turntable, turntable motor etc. are replaced.

1. Place oven on a flat and stable surface, otherwise inaccurate function may be observed.
2. Place both metal turntable and glass cooking tray in it's place.
3. Plug the power supply cable into outlet.
4. Oven switches to test mode by following procedures.
   (1) Press Clock pad.
   (2) Press Delay/Stand pad.
   (3) Press Start pad.
   (4) Press Combination pad.

After a few seconds, 4 digits of number and/or alphabet will appear in the display window such as (48:4A), (56:5B) etc..
If each 2 digits of number are not matched then a 0 gram balance adjustment is required.

5. Remove cover and adjust weight sensor 0 gram balance at lower right side of escutcheon base as shown in figure.
   To adjust right side two digits = B number equal to left two digits - A number such as (56:56), (5B:5B) etc.
6. Press Stop/Reset pad to reset out of the test mode.
   NOTE: If test mode remains, oven will not operate correctly.





MEASUREMENTS AND ADJUSTMENTS

1. Adjustment of Primary latch switch, Secondary latch switch and short switch

(A) When mounting Primary latch switch, Secondary latch switch and short switch to door hook assembly, mount the Primary latch switch, the Secondary latch switch and the short switch to the door hook assembly as shown in Figure.

NOTE: No specific adjustment during installation of Primary latch switch, Secondary latch switch and short switch to the door hook is necessary.

(B) When mounting the door hook assembly to the oven assembly, adjust the door hook assembly by moving it in the direction of arrow in Figure so that the oven door will not have any play in it. Check for play in the door by pulling the door assembly. Make sure that the latch keys move smoothly after adjustment is completed. Completely tighten the screws holding the door hook assembly to the oven assembly.

2. Measurement of microwave output

The output power of the magnetron can be determined by performing IEC standard test procedures. However, it is possible to test the magnetron by following procedure outlined below.

Necessary equipment:

* 1 litre beaker * Glass thermometer
* Wrist watch or stopwatch

NOTE : Check the line voltage under load to ensure it meets specifications. Low voltage condition will cause a reduction in magnetron output. Temperature readings and heating time, should be as accurate as possible.

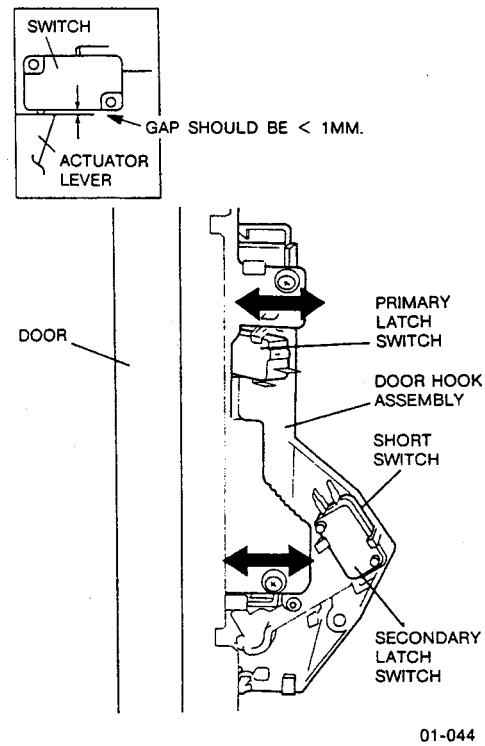
Output power performance test procedure.

(A) Fill the beaker with exactly one litre of tap water.
Stir the water using the thermometer and note the temperature. (Record as T1)

(B) Place the beaker in the center of cook plate.
Set the oven for High power and heat for exactly one minute.

(C) After completion of the heating cycle, stir the water again with the thermometer and note the temperature.
(Record as T2).

The normal temperature rise (T2—T1), for these models should be more than 7.0°C using the High power selection with the oven operating at the specified line voltage.



Please confirm that the gap between the switch housing and switch actuator levers is no more than 1.0mm when the door is closed.

TROUBLESHOOTING GUIDE

CAUTION

1. Check grounding before checking for trouble.
2. Be careful of the high voltage circuit.
3. Discharge high voltage capacitor.
4. When checking the continuity of the switches or the high voltage transformer, disconnect one lead wire from these parts and then check continuity with the AC plug removed. To do otherwise may result in a false reading or damage to your meter.
5. Do not touch any parts of the circuitry on the digital programmer circuit, since static electric discharge may damage this control panel.
   Always touch yourself to ground while working on this panel to discharge any static charge in your body.
6. A 230V AC is present at the shaded area ▒▒ of the digital programmer circuit (Terminals of power relaies and primary circuit of low voltage transformer). When troubleshooting, be cautious of possible electrical shock hazard.

First of all operate the microwave oven following the correct operating procedures described in order to find the exact cause of any trouble.

[TROUBLE 1] Oven does not start cooking

	SYMPTOM	CAUSE	CORRECTIONS
1.	Oven is dead. Fuses are OK. No display and no operation at all.	1. Open or loose lead wire harness	
		2. Open thermal cutout (Magnetron)	Check fan motor when thermal cutout is defective.
		3. Open low voltage transformer 4. Defective DPC	
2.	Oven does not accept key input (Program)	1. Key input is not in-sequence	Refer to operation procedure.
		2. Open or loose connection of membrane key pad to DPC (Flat cable) 3. Shorted or open membrane key board	
		4. Defective DPC	Refer to DPC troubleshooting.
3.	Oven lamp and fan motor turn on when oven is plugged in with door closed.	1. Misalignment or loose wiring of secondary latch switch.	Adjust door and latch switches.
		2. Defective secondary latch switch	
4.	Timer starts count down but no microwave oscillation.	1. Off-alignment of latch switches	Adjust door and latch switches.
		2. Defective primary latch switch 3. Open or loose wiring of power relay 4 4. Defective power relay 4. 5. Defective DPC. 6. Open or loose connection of high voltage circuit especially magnetron filament circuit NOTE: Large contact resistance will bring lower magnetron filament voltage and causing magnetron to lower output and/or intermittent oscillation.	
		7. Defective high voltage component H.V. Transformer H.V. Capacitor H.V. Diode Magnetron	Check high voltage component according to component test procedure and replace if it is defective.

[TROUBLE 2] Fuse is blown

	SYMPTOM	CAUSE	CORRECTIONS
1.	8A fuse is blown.	1. Shorted lead wire harness	
		2. Defective primary latch switch and short switch	Check adjustment of latch swithes and door
		3. Shorted H.V. Capacitor	
		4. Shorted H.V. Diode	Replace H.V. Diode and protector diode (*NOTE)
		5. Defective magnetron	Replace magnetron and protector diode (*NOTE)
		6. Shorted H.V. Transformer	Replace H.V.Transformer and protector diode (*NOTE)
		7. Protector diode	
2.	16A fuse is blown.	1. Shorted lead wire haness 2. Shorted heater 3. Defective power relays 4. Defective DPC	
3.	1.25A fuse is blown.	1. Shorted short switch 2. Shorted primary latch switch	Adjust door and latch switches
		※NOTE: Be sure to replace protector diode together with those H.V.Components. In this case, only D2 of protector diode may be shorted due to faulty H.V.Component. Therefore, if protector diode is not replaced together, high voltage transformer will be damaged (over heated).	

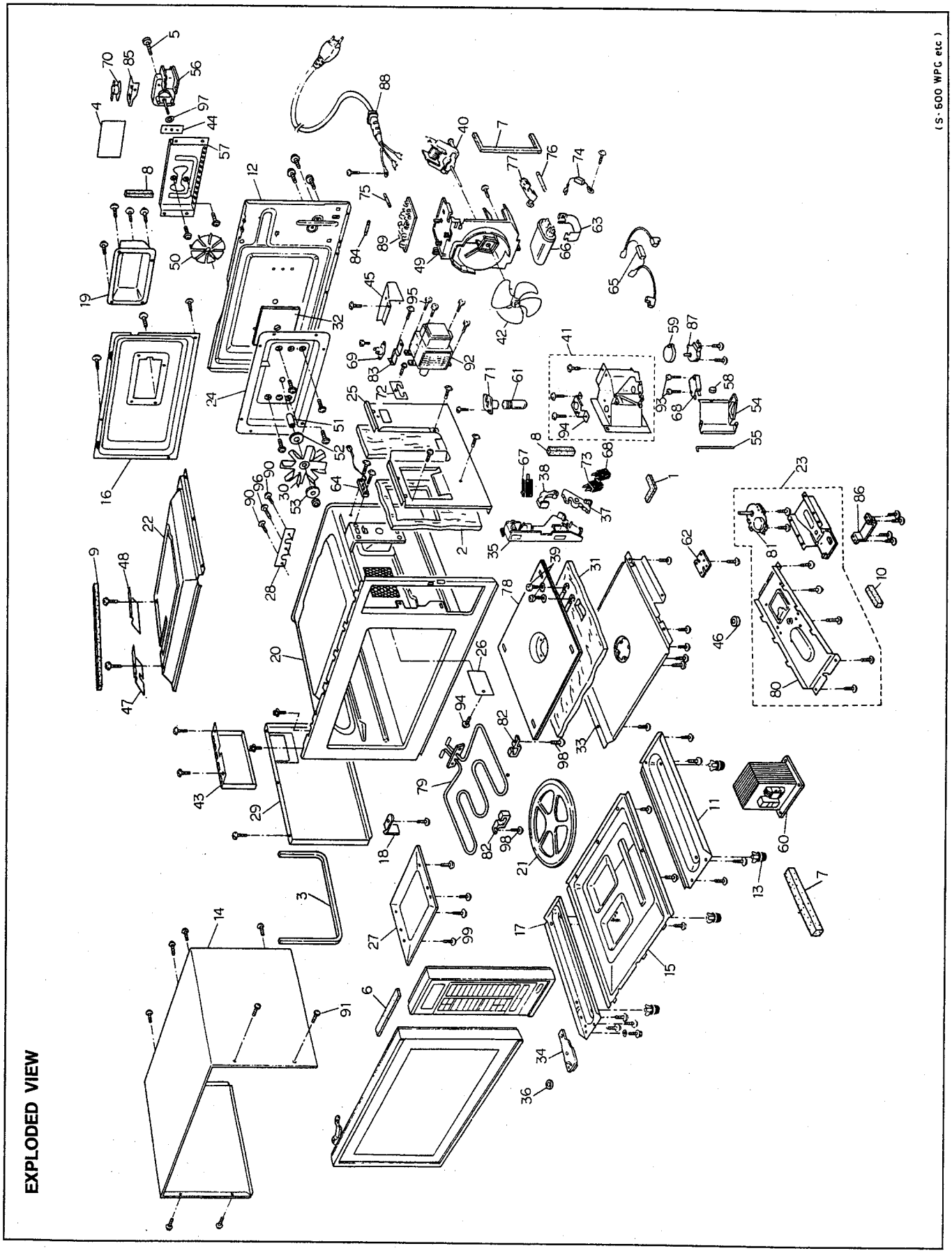
[TROUBLE 3] Other troubles

	SYMPTOM	CAUSE	CORRECTIONS
1.	Microwave output is low. Oven takes longer time to cook food.	1. Decrease in power source voltage 2. Open or loose wiring of magnetron filament circuit (Intermittent oscillation) 3. Aging change of magnetron	Consult electrician
2.	Fan motor and oven lamp turn on when door is opened.	1. Shorted primary latch switch	
3.	Loud buzzing noise can be heard.	1. Loose fan and fan motor 2. Loose screws on H.V.Transformer	
4.	Oven stops operation during cooking	1. Off alignment of latch switches 2. Open or loose wiring of primary and secondary latch switch 3. Operation of thermal cutout (Magnetron)	Adjust door and latch switches.
5.	Oven returns to plug in mode 18 seconds after Start pad is pressed.	1. Open or loose wiring of shutter motor and shutter switch 2. Open shutter switch 3. Defective shutter motor 4. Defective DPC	
6.	Oven returns to plug in mode 6 seconds after Start pad is pressed. (Except microwave cooking mode)	1. Shorted shutter switch 2. Defective DPC.	
7.	Oven returns to plug in mode 1 minute after Start pad is pressed.	1. Open or loose wiring of oven temp sensor 2. Defective oven temp sensor 3. Defective DPC.	
8.	At auto sensor cooking, oven stops 12 seconds after Start pad is pressed.	1. Weight of food is too light 2. Misadjustment of weight sensor 0 gram balance 3. Open or loose wiring of weight sensor 4. Wrong use of cooking accessory 5. Defective weight sensor 6. Defective DPC	Refer to component test procedure
9.	At auto sensor cooking, oven stops and 3X 5 beep sounds heard 12 seconds after Start pad is pressed.	1. Weight of food is too heavy 2. Misadjustment of weight sensor 0 gram balance 3. Defective weight sensor 4. Defective DPC	Refer to component test procedure

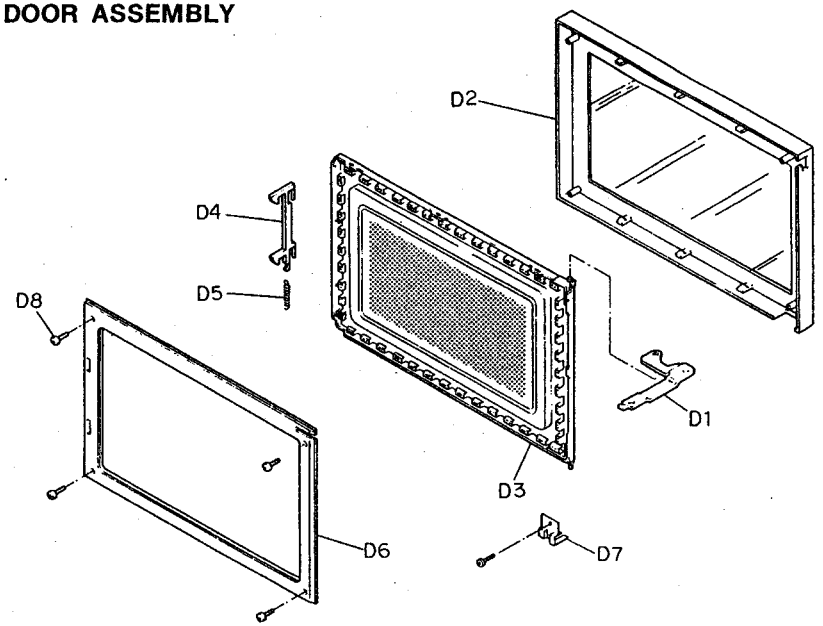
[TROUBLE 4] Trouble related to Digital programmer circuit

SYMPTOM	STEP	CHECK	RESULT	CAUSE/CORRECTIONS
No Display when oven is first plugged in	1	Low voltage transformer (LVT) secondary voltage	Abnormal 0V	LVT
			Normal	→ Step 2
	2	IC-1 pin 64 voltage	Abnormal	IC-5
			Normal = 5V	→ Step 3
	3	IC-1 pin 27 voltage	Abnormal	IC-6
			Normal = 5V	IC-1,CX1,Display
No key input	1	Membrane switch and continuity	Abnormal	Membrane switch
			Normal	IC-1
No beep sound	1	IC-1 pin 23 voltage	Abnormal	IC-1
			Normal	BZ
Power relay 1 does not turn on even though the program has been set and the start pad is tapped	1	IC-1 pin 16 voltage while operation	Abnormal	IC-1
			Normal = 5V	RY1, IC3
No microwave oscillation at any power setting	1	IC-1 pin 15 and pin 17 voltages while operation at high power	Abnormal	IC-1
			Normal 15---5V, 17---5V	→ Step 2
	2	Q6 transistors	Abnormal	Q6
			Normal	IC-12, RY4
Dark or unclear display	1	Replace display and check operation	Normal	Display
			Abnormal	IC-1
Missing or lighting of unnecessary segment	1	Replace IC-1 and check operation	Normal	IC-1
			Abnormal	Display
Auto sensor cooking does not operate.	1	Weight sensor balance	Abnormal	Adjust volume
			Normal	→ Step 2
	2	IC-1 pin 19 voltage	Abnormal	IC-1
			5V (10 sec.) ↓ 0V (1 sec.) ↓ Normal 5V	→ Step 3
	3	IC-1 pin 30 voltage	Abnormal	Weight sensor unit
			Normal = 2.3V	IC-1
Power relay 2,3,5 and 8 does not turn on	1	IC-1 pin 10,13,14 and 25 voltage	Abnormal	IC-1
			Normal	→ Step 2
	2	IC-3 pin 10,13,14 and 16 voltage	Abnormal	IC3
			Normal	RY2,3,7 and 8

EXPLODED VIEW AND PARTS LIST

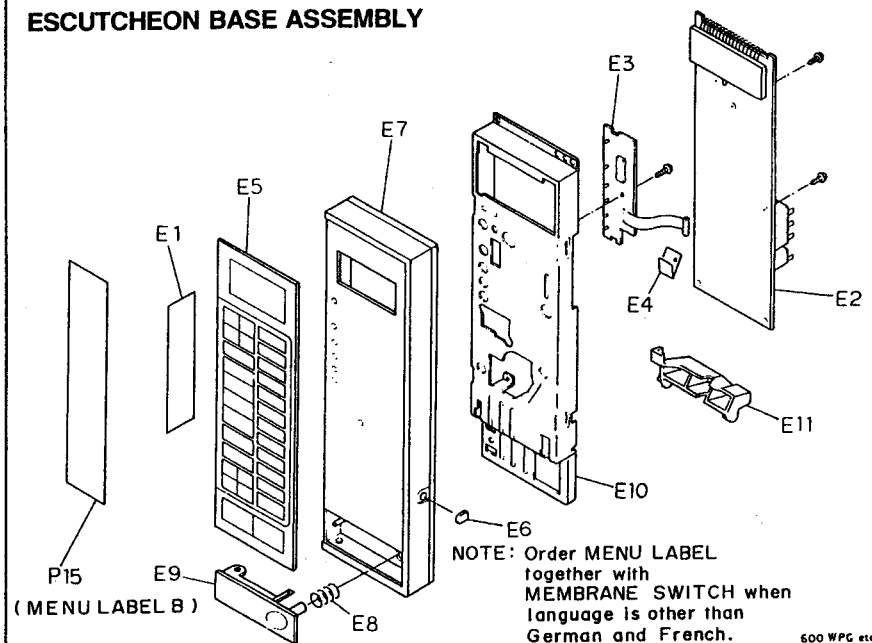


DOOR ASSEMBLY



(S-600 WPG etc)

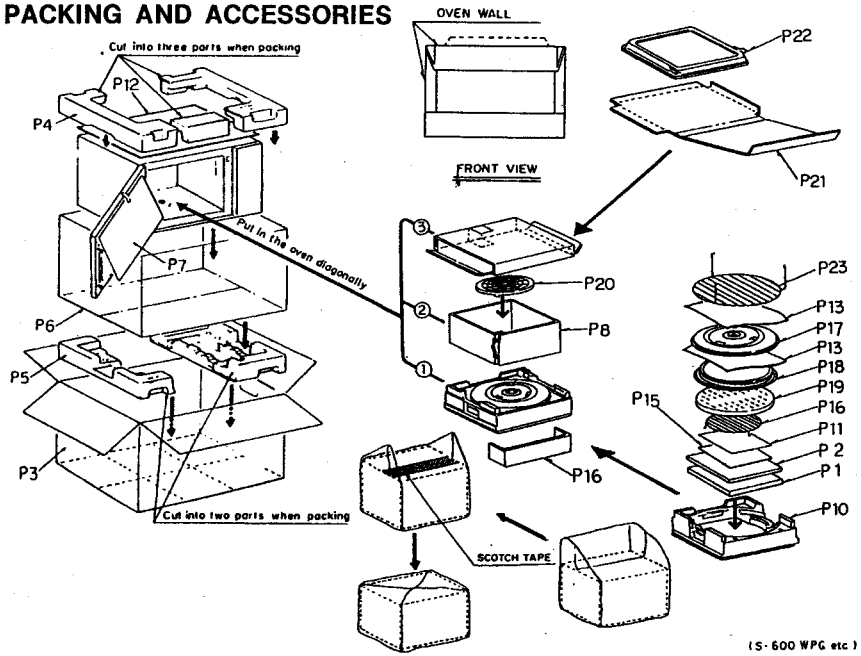
ESCUTCHEON BASE ASSEMBLY



NOTE: Order MENU LABEL together with MEMBRANE SWITCH when language is other than German and French.

600 WPG etc)

PACKING AND ACCESSORIES



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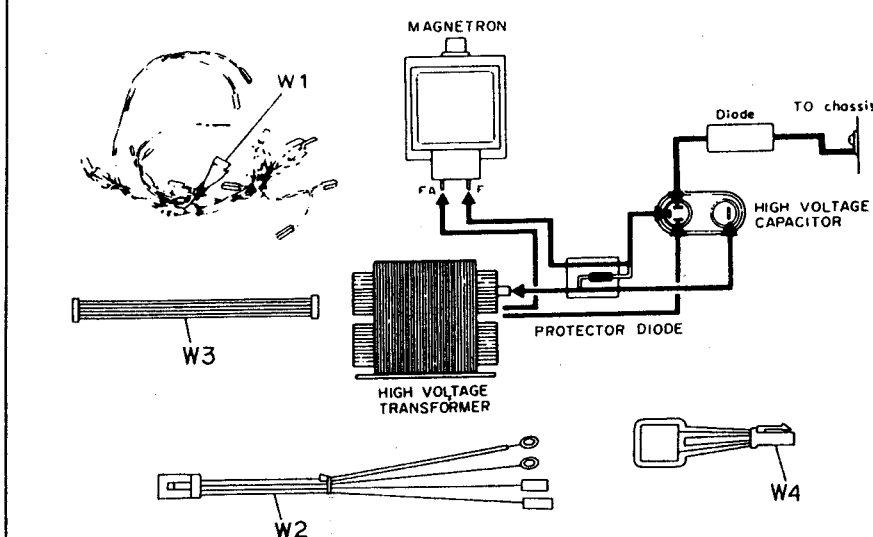
WIRING MATERIAL



(S-600 WPG etc)

PARTS LIST

NOTE 1: When ordering replacement part(s), please use part number(s) shown in this parts list.
Do not use description of the part.
2: Important safety notice:
Components identified by ⚠ mark have special characteristics important for safety.
When replacing any of these components, use only manufacturer's specified parts.

Ref. No.		Part No.	Part Name & Description	Pcs/ Set	Remarks
1		ANE0921000CG	CUSHION RUBBER C	1	
2		A22586000BP	ADIABATIC MATERIAL C	1	
3		ANE0925000BZ	CUSHION RUBBER C	1	
4		ANE00062Q0EP	CAUTION LABEL	1	
5		XYN5+C10FN	SCREW	2	5X10 FOR HEATER A
6		ANE0921000BK	CUSHION RUBBER C	1	
7		ANE000Z000AA	CUSHION RUBBER C	2	
8		ANE0924000AG	CUSHION RUBBER C	2	
9		ANE0924000AT	CUSHION RUBBER C	1	
10		ANE0925000BF	CUSHION RUBBER C	1	
11		A10015020AP	BASE	1	
12		A10046000BP	BACK PANEL	1	
13		ANE1008-5S0	RUBBER FOOT	4	
14		A10096000BP	CABINET BODY (U)	1	NN-D501,NN-D801
14		A10096000HBP	CABINET BODY (U)	1	NN-D551,NN-D851
15		A10266000BP	BASE C	1	
16		A10586000BP	BACK PANEL COVER A	1	
17		A11295020AP	BASE B	1	
18		A11486000BP	BRACKET	1	
19		A11836000BP	BACK PANEL B	1	
20		A200A6000BP	OVEN	1	
21		A201F6000BP	TURNTABLE	1	
22		A22786000BP	UPPER HEATER PANEL	1	
23		A203K6000BP	WEIGHT SENSOR	1	NN-D801,NN-D851
24		A203M6000BP	HEATER PANEL	1	
25		A22366000BP	RIGHT HEATER PANEL	1	
26		A20556000BP	COVER	1	
27		A21446000BP	UPPER PANEL	1	
28		A22266000BP	HEATER COVER	1	
29		A22376000BP	LEFT HEATER PANEL	1	
30		A2239-1550	CIRCULATION FAN	1	
31		A22426000BP	ADIABATIC MATERIAL A	1	
32		A22596000BP	ADIABATIC MATERIAL D	1	
33		A22776000BP	LOWER HEATER PANEL	1	
34		A301L4210AP	LOWER HINGE	1	
35		A30204310AG	DOOR HOOK	1	
36		ANE3081B60AP	SPACER	1	
37		A31374650AP	HOOK SPACER B	1	
38		A31384650AP	HOOK SPACER C	1	
39		XYN3+C25V	SCREW	1	3X25 FOR HEATER FAN MOTOR
40	⚠	A400A5110QP	FAN MOTOR	1	AC,26W,SINGLE
41		A400E6000BP	AIR GUIDE A	1	
42		ANE40086W0AP	FAN	1	
43		A40246000BP	EXHAUST GUIDE A	1	
44		A40306000BP	AIR GUIDE D	1	
45		A40316000BP	AIR GUIDE C	1	
46		A4071-1580	WASHER	1	
47		A41076000BP	EXHAUST GUIDE B	1	
48		A41196000BP	EXHAUST GUIDE D	1	
49		A41445540AP	ORIFICE	1	
50		A4159-1560	FAN	1	
51		A41616000BP	SPACER A	1	
52		ANE4163-E00	SPACER C	1	
53		A41636000BP	SPACER C	1	
54		A41736000BP	SHUTTER	1	
55		A41746000BP	SHAFT	1	
56		A41796000BP	HEATER FAN MOTOR	1	
57		A41806000BP	FAN MOTOR BRACKET	1	
58		A41834210AP	RUBBER CUSHION	1	
59		A48236000BP	CAM A	1	
60	⚠	A600B6000GP	H.V.TRANSFORMER	1	1.5KVA
61		A60304080BP	INCANDESCENT LAMP	1	20W/240V
62		A60325020AP	TERMINAL PLATE	1	
63		A60374760GP	CAPACITOR BRACKET	1	
64		A605Y4210AP	OVEN TEMP SENSOR	1	
65		A606V5110BP	PROTECTOR DIODE	1	
66	⚠	A60904080GP	H.V.CAPACITOR	1	1.14μ F,AC2100V
67	⚠	ANE61424L0AG	MICROSWITCH	1	(V-16G-3C26) PRIMARY LATCH SWITCH
68	⚠	A61425180AP	MICROSWITCH	2	(L-3C2-2) SECONDARY LATCH SWITCH
69	⚠	A61455850GP	THERMAL CUTOUT	1	
70	⚠	A61456000BP	THERMAL CUTOUT	1	
71	⚠	A61525870GP	SOCKET	1	
72		A61566000BP	INSULATION PLATE	1	
73		ANE6161-3X0	MICRO SWITCH	1	(V-16G-1C25) SHORT SWITCH
74		A62024000AP	DIODE,SI	1	
75	⚠	ANE6230P10GN	FUSE	1	(16A)
76	⚠	ANE6230Z70BP	FUSE	1	(8A)
77		A62314000AP	FUSE HOLDER	1	
78	⚠	A630G6000GP	HEATER A	1	
79	⚠	A630H6000GP	GRILL ELEMENT	1	
80		A63236000BP	BRACKET	1	NN-D801,NN-D851
80		A63236010BP	BRACKET	1	NN-D501,NN-D551
81		A63266000BP	TURNTABLE MOTOR	1	NN-D801,NN-D851
81	⚠	A63266010BP	TURNTABLE MOTOR	1	NN-D501,NN-D551
82		ANE6418Z70BP	HEATER SUPPORT B	2	
83		A64306000BP	THERMAL CUTOUT MOUNT	1	
84	⚠	ANE6595Q50GS	FUSE	1	(1.25A)
85		A66266000BP	THERMAL CUTOUT MOUNT	1	
86		A66305020AP	MOTOR STOPPER	1	NN-D501,NN-D551
87		A68076000BP	SHUTTER MOTOR	1	
88	⚠	A900C5540WP	AC CORD W/PLUG	1	NN-D501,NN-D551,NN-D801, NN-D851 WPG
88	⚠	A900C5540EP	AC CORD W/PLUG	1	NN-D851 SPG
89		A692Y6000GP	NOISE FILTER (U)	1	
90		XSB4+10FNSE	SCREW	2	4X10 FOR HEATER COVER
91		XTC4+10BC	SCREW	4	NN-D551,NN-D851 4X10 FOR CABINET BODY
91		XTC4+10BFZ	SCREW	4	NN-D501,NN-D801 4X10 FOR CABINET BODY
92	⚠	2M210-M1C	MAGNETRON	1	
93		XTN3+16B	SCREW	2	3X16 FOR SWITCH
94		A66036000BP	OVEN LAMP BRACKET	1	
95		XTWANE4+10RU	SCREW	4	4X10 FOR MAGNETRON
96		XTY4+E10FN	SCREW	1	4X10 FOR HEATER COVER
97		XUEANE32KP	RING	1	
98		XYC4+F16XN	SCREW	2	4X16 FOR HEATER SUPPORT
99		XYD4+BC12XRK	SCREW	4	4X12 FOR UPPER PANEL, COVER

DOOR ASSEMBLY

D1		A300B6000BP	UPPER HINGE	1	
D2		A302A6000GP	DOOR A (U)	1	NN-D501,NN-D801
D2		A302A6000HGP	DOOR A (U)	1	NN-D551,NN-D851
D3		A302K6000BP	DOOR E (U)	1	
D4		A30184650AP	DOOR KEY	1	
D5		A30214000AP	DOOR KEY SPRING	1	
D6		A30855020AP	DOOR C	1	NN-D501,NN-D801
D6		A30855040HAP	DOOR C	1	NN-D551,NN-D851
D7		A32186000BP	BRACKET	1	
D8		XTBANE4+12FC	SCREW	4	NN-D551,NN-D851

(S-600 WP/SP)

Ref. No.		Part No.	Part Name & Description	Pcs/ Set	Remarks
D8		XTBANE4+12FK	SCREW	4	4X12 NN-D501,NN-D801 4X12

ESCUTCHEON BASE ASSEMBLY

E1		A01576010WP	NAME PLATE	1	NN-D501
E1		A01576010HWP	NAME PLATE	1	NN-D551
E1		A01576000WP	NAME PLATE	1	NN-D801
E1		A01576000HSP	NAME PLATE	1	NN-D851 SPG
E1		A01576000HWP	NAME PLATE	1	NN-D851 WPG
E2	⚠	A603L6010WP	D.P.CIRCUIT (U)	1	NN-D501,NN-D551 (W/COMPONENT)
E2	⚠	A603L6000WP	D.P.CIRCUIT (U)	1	NN-D801,NN-D851 (W/COMPONENT)
E3		A605Q6000BP	PC BOARD F (U)	1	NN-D801,NN-D851
E4		A60706000BP	INSULATION SHEET	1	NN-D801,NN-D851
E5	⚠	A64796010WP	MEMBRANE SWITCH	1	NN-D501,NN-D551
E5	⚠	A64796000WP	MEMBRANE SWITCH	1	NN-D801,NN-D851
E6		A80296000BP	BANG	1	NN-D501,NN-D801
E6		A80296000HBP	BANG	1	NN-D551,NN-D851
E7		A80346000BP	ESCUTCHEON BASE	1	NN-D501,NN-D801 (NOTE 3)
E7		A80346000HBP	ESCUTCHEON BASE	1	NN-D551,NN-D851 (NOTE 3)
E8		ANE80378A0AG	COOK BUTTON SPRING	1	
E9		A80726000BP	DOOR OPENING BUTTON	1	NN-D501,NN-D801
E9		A80726000HBP	DOOR OPENING BUTTON	1	NN-D551,NN-D851
E10		A81276000BP	BACK PANEL	1	
E11		A82565110BP	DOOR OPENING LEVER	1	

PACKING AND ACCESSORIES

P1		A000B6000WP	COOK BOOK	1	NN-D501,NN-D551,NN-D801, NN-D851 WPG
P1		A000B6000SP	COOK BOOK	1	NN-D851 SPG
P2		A00036000WP	INSTRUCTION BOOK	1	
P3		A01026010EP	PACKING CASE,PAPER	1	NN-D501
P3		A01026010HEP	PACKING CASE,PAPER	1	NN-D551
P3		A01026000EP	PACKING CASE,PAPER	1	NN-D801
P3		A01026000HEP	PACKING CASE,PAPER	1	NN-D851
P4		A01046000BP	UPPER FILLER	1	
P5		A01056000BP	LOWER FILLER	1	
P6		A01066000BP	VINIL COVER	1	
P7		ANE0107580AP	DOOR SHEET	1	
P8		A01086000GP	TRAY PACKING	1	
P9		A01106000BP	RACK PACKING	1	
P10		A01136000BP	TRAY STYROL	1	
P11		ANE0169Q50GN	SERVICE CENTER LIST	1	
P12		A01926000BP	PAPER SHEET	1	NN-D501,NN-D801
P13		ANE0207-860	STYROL SHEET	2	
P14		A02196000BP	PACKING	1	
P15		A04456000EZ	MENU LABEL B	1	(Italian) NN-D801, NN-D851 WPG
P15		A04456000FZ	MENU LABEL B	1	(French) NN-D801, NN-D851 WPG
P15		A04456000SP	MENU LABEL B	1	NN-D851 SPG
P15		A04456010EZ	MENU LABEL B	1	(Italian) NN-D501, NN-D551
P15		A04456010FZ	MENU LABEL B	1	(French) NN-D501, NN-D551
P16		A060V6000BP	HIGH BAKING RACK	1	
P17		A06014000AP	GLASS COOKING TRAY	1	
P18		A06015020AP	METAL TRAY	1	
P19		A06485020AP	SPATTER SHIELD	1	
P20		A07066000BP	RACK	1	NN-D801,NN-D851
P21		A03386000BP	TRAY PACKING	1	
P22		A060W6000BP	BROIL PAN	1	
P23		A060V5870SP	HIGH BAKING RACK	1	

WIRING MATERIAL

Ref. No.		Part No.	Part Name & Description	Pcs/ Set	Remarks
W1		A030A6000GP	LEAD WIRE HARNESS	1	(W/NOISE KILLER)
W2		A03606000BP	LEAD WIRE	1	
W3		A03616000BP	LEAD WIRE	1	NN-D801,NN-D851
W4		A604Q6000BP	NOISE KILLER	1	

PEF NO. 89 NOISE FILTER (U)

		ERF10ZXJ240Z	INRUSH RESISTOR	1	
C1		ECQU2A104MN	POLYESTER CAPACITOR	1	0.1 μF,250V,+20%−20%
C2,3		ECKDNS472MEX	CERAMIC CAPACITOR	2	0.0047 μF,250V,+20%−20%
CN1		AEEMMA00703W	CONNECTOR	1	3PIN
F1		A62316010BP	FUSE HOLDER	2	
F2		A62316000GP	FUSE HOLDER	2	
L1		A621A6000BP	FILTER COIL	1	
R2		ERD25FJ564S	CARBON FILM RESISTOR	1	560KΩ,1/4W,+±5%
ZNR1		ERZC10DK621F	VARISTOR	1	
ZNR2,3		ERZC10DK112A	VARISTOR	2	

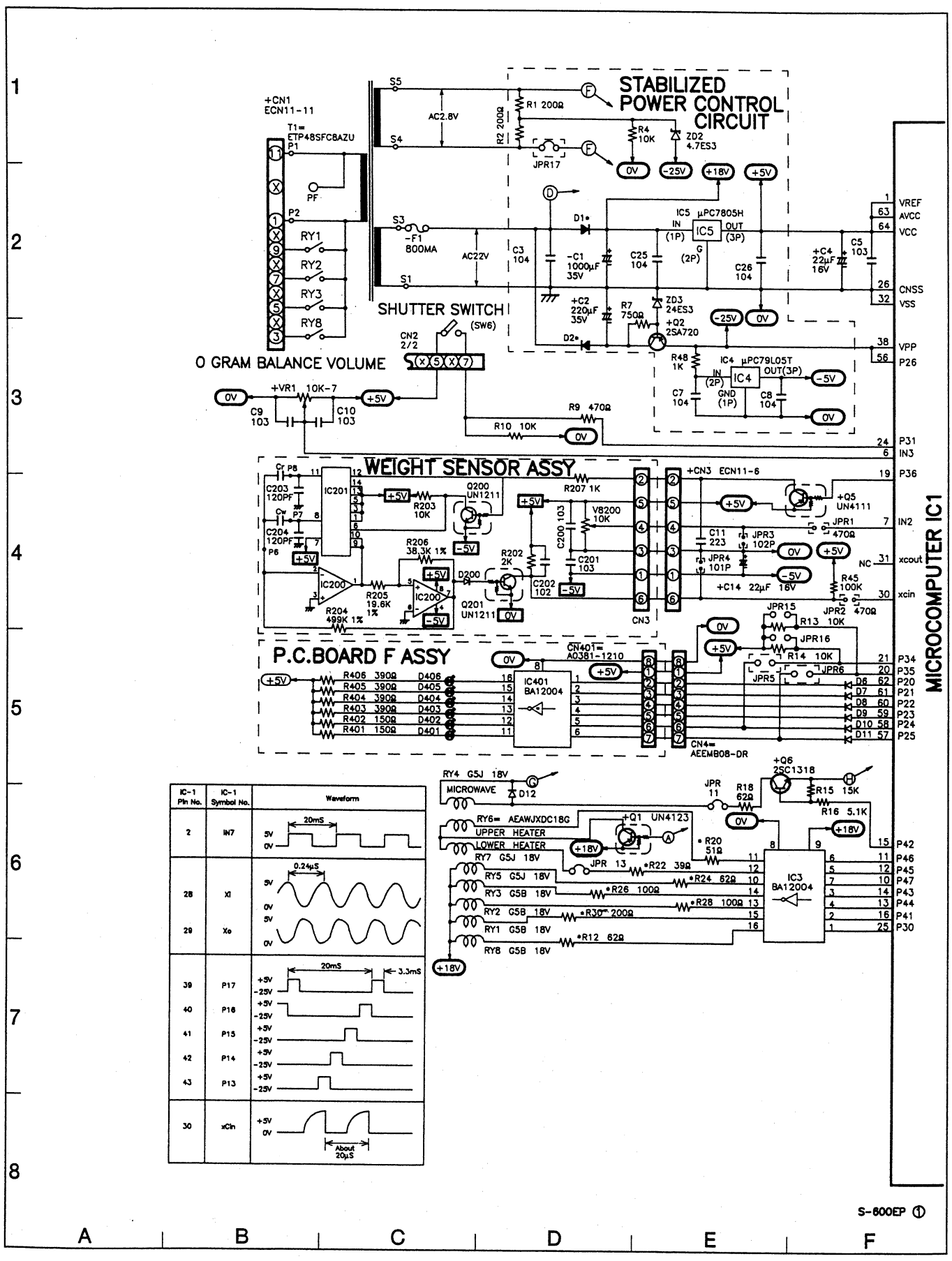
REF. NO. E3 P.C. BOARD F(U) (NN-D801, NN-D851)

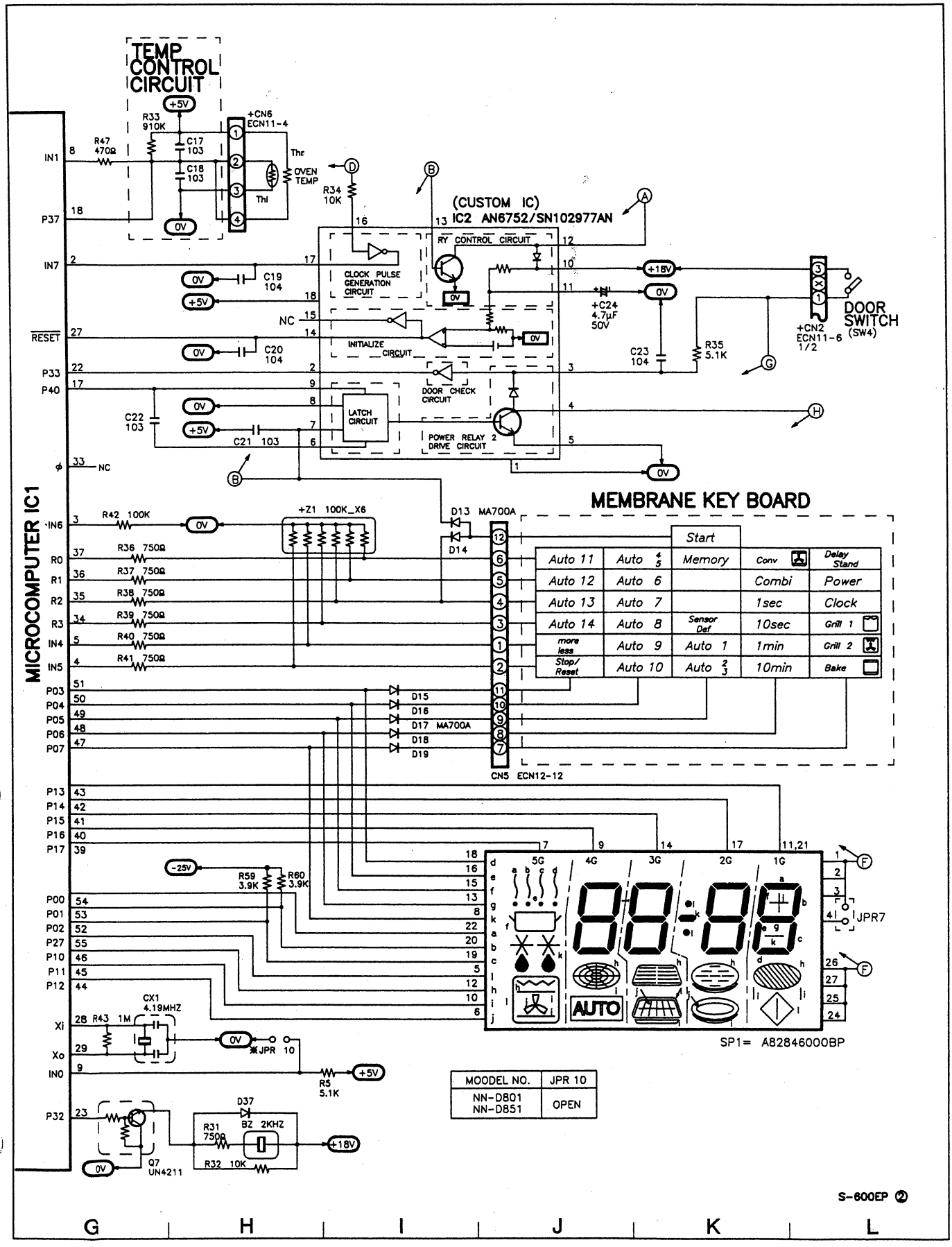
D401		AELN4914D	LED	1	
D402		AELN4414G	LED	1	
D403,404, 405,406		AELN4214R	LED	4	
IC401		AEICUPA2004C	I.C.	1	
R401,402		ERDS2TJ151T	CARBON FILM RESISTOR	2	NN-D801,NN-D851 150Ω,1/4W,+5%−5%
R403,404, 405,406		ERDS2TJ391T	CARBON FILM RESISTOR	4	NN-D801,NN-D851 390Ω,1/4W,+5%−5%

NOTE 3 : Please order name plate together.

DIGITAL PROGRAMMER CIRCUIT (NN-D801, NN-D851)

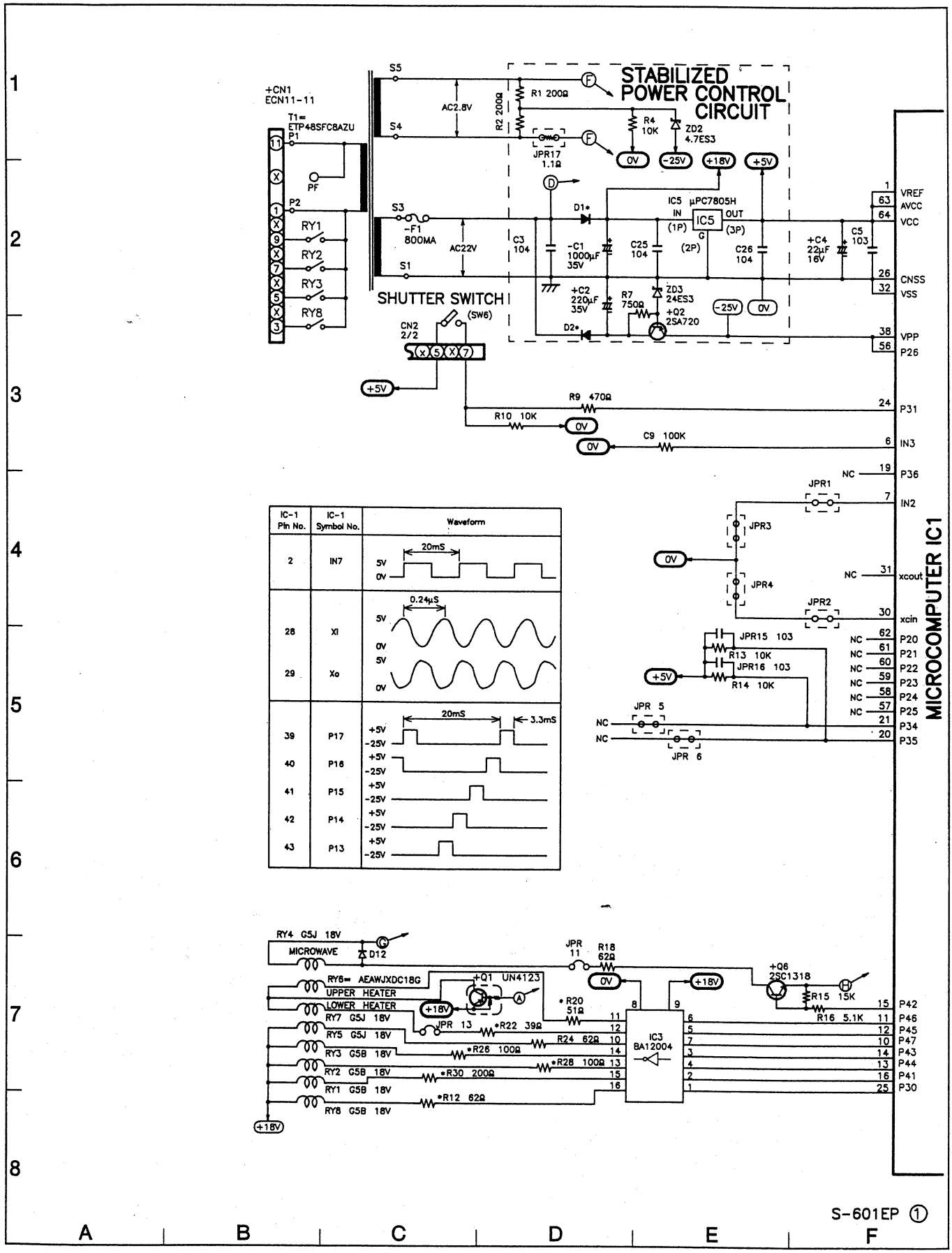
SCHEMATIC DIAGRAM

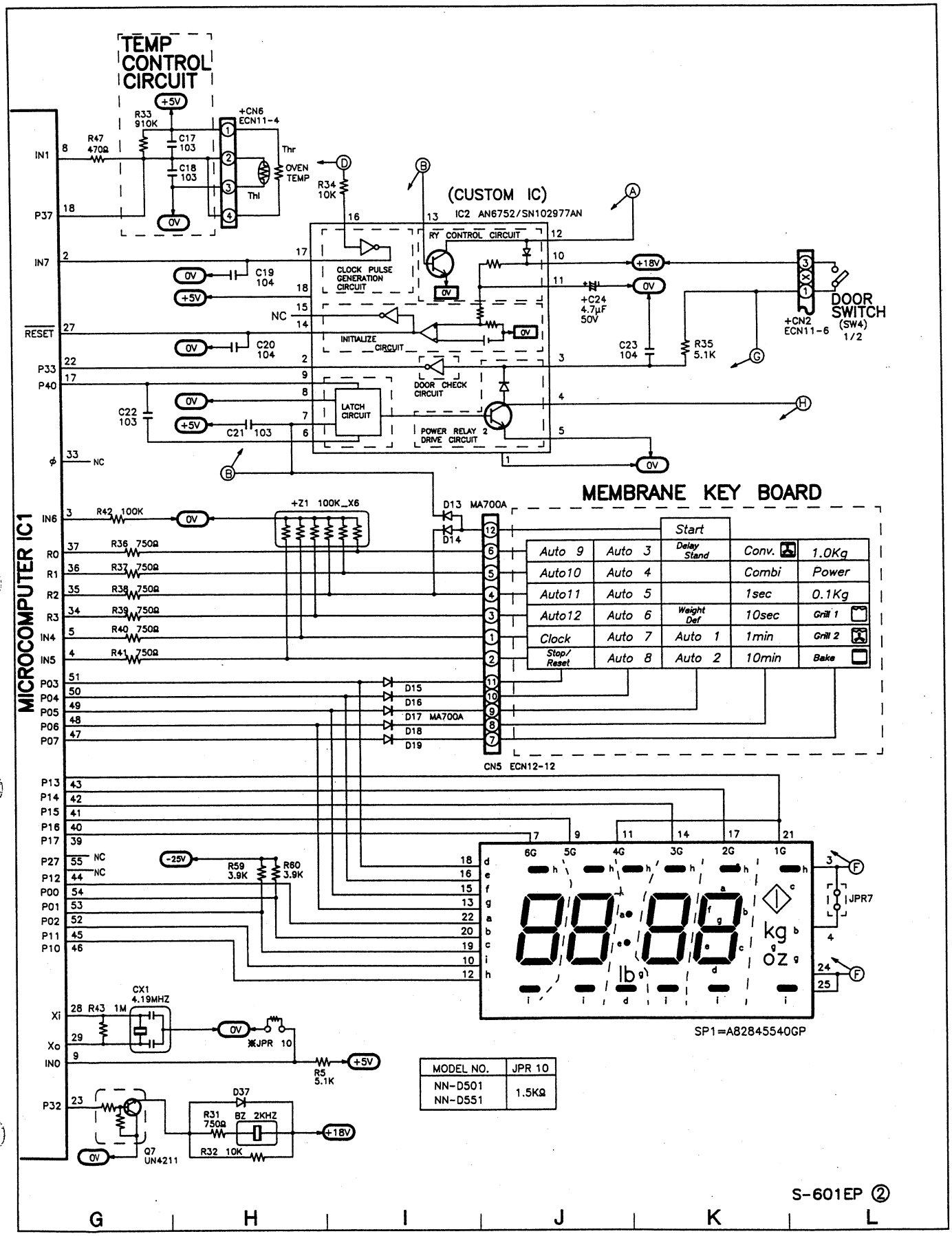



TEMP CONTROL CIRCUIT
MICROCOMPUTER IC1
(CUSTOM IC)
IC2 AN6752/SN102977AN
CLOCK PULSE GENERATION CIRCUIT
INITIALIZE CIRCUIT
LATCH CIRCUIT
DOOR CHECK CIRCUIT
RY CONTROL CIRCUIT
POWER RELAY 2 DRIVE CIRCUIT
MEMBRANE KEY BOARD
Start
Auto 11
Auto 4/5
Memory
Conv
Delay Stand
Auto 12
Auto 6
Combi
Power
Auto 13
Auto 7
1sec
Clock
Auto 14
Auto 8
Sensor Def
10sec
Grill 1
more less
Auto 9
Auto 1
1min
Grill 2
Stop/ Reset
Auto 10
Auto 2/3
10min
Bake
CN5 ECN12-12
DOOR SWITCH (SW4)
+CN2 ECN11-6 1/2
+CN6 ECN11-4
OVEN TEMP
JPR7
AUTO
SP1= A82846000BP
CX1 4.19MHZ
Q7 UN4211
D37 BZ 2KHZ
MOODEL NO. | JPR 10
NN-D801 NN-D851 | OPEN
S-600EP ②

DIGITAL PROGRAMMER CIRCUIT (NN-D501, NN-D551)

SCHEMATIC DIAGRAM





MODEL NO.	JPR 10
NN-D501 NN-D551	1.5KΩ

DIGITAL PROGRAMMER CIRCUIT

PARTS LIST

Ref. No.	Part No.	Description	Pcs/ Set	Remarks
BZ	AEFB22EP2002	BUZZER	1	2.0KHZ
C1	ECEA1VU102E	ELECTROLYTIC CAPACITOR,AL	1	1000μF/35V/−20% +20%
C2	ECEA1VU221B	ELECTROLYTIC CAPACITOR,AL	1	220μF/35V/−20% +20%
C3,7,8,19, 20,23,25,26	AECF50F104Z	CERAMIC CAPACITOR	8	NN-D801,NN-D851 0.1μF/50V/−20% +80%
C3,19,20,23, 25,26	AECF50F104Z	CERAMIC CAPACITOR	6	NN-D501,NN-D551 0.1μF/50V/−20% +80%
C4	ECEA1CU220B	ELECTROLYTIC CAPACITOR,AL	1	NN-D501,NN-D551 22μF/16V/−20%+ 20%
C4,14	ECEA1CU220B	ELECTROLYTIC CAPACITOR,AL	2	NN-D801,NN-D851 22μF/16V/−20%+ 20%
C5,9,10,17, 18,21,22	ECBT1E103ZF5	CERAMIC CAPACITOR	7	NN-D801,NN-D851 0.01μF/25V/−20% +80%
C5,17,18,21, 22	ECBT1E103ZF5	CERAMIC CAPACITOR	5	NN-D501,NN-D551 0.01μF/25V/−20% +80%
C9	ERDS2TJ104T	CARBON FILM RESISTOR	1	NN-D501,NN-D551 100KΩ,1/4W ±5%
C11	ECBT1E223ZF5	CERAMIC CAPACITOR	1	NN-D801,NN-D851 0.022μF/25V/− 20%+80%
C24	ECEA1HU4R7B	ELECTROLYTIC CAPACITOR,AL	1	4.7μF/50V/−20% +20%
CN1	AEEMMA55511W	CONNECTOR	1	11PIN
CN2	AEEMMA05507W	CONNECTOR	1	7PIN
CN3	AEEMMC03F06W	CONNECTOR	1	NN-D801,NN-D851 6PIN
CN4	AEEMB08-DR	CONNECTOR	1	NN-D801,NN-D851
CN5	AEEM12FDZBTM	CONNECTOR	1	
CN6	AEEMMC00F04W	CONNECTOR	1	4PIN
CX1	EFOGC4194T4	CERAMIC RESONATOR	1	4.19MHZ
D1,2	AEDNERA1502	DIODE,SI	2	0.1A
D6,7,8,9,10, 11,12,14,15, 16,18,19,37	MA196-(TA5)	DIODE,SI	13	NN-D801,NN-D851 0.1A
D12,14,15, 16,18,19,37	MA196-(TA5)	DIODE,SI	7	NN-D501,NN-D551 0.1A
D13,17	MA700A-(TA)	DIODE,SI	2	0.03A
DISP	A64565540GP	FLUORESCENT TUBE	1	NN-D501,NN-D551
DISP	A64566000BP	FLUORESCENT TUBE	1	NN-D801,NN-D851
F1	ANE604K8U0BP	WEEK POINT ELEMENT	1	
IC1	AEIC50946145	LSI	1	
IC2	AEIC102977AN	IC	1	NN-D501,NN-D551
IC2	AN6752	IC	1	NN-D801,NN-D851
IC3	AEICUPA2004C	IC	1	
IC4	AEICP79L05T	IC	1	NN-D801,NN-D851
IC5	AEICUPC7805H	IC	1	
JPR1,2	ERDS2TJ471T	CARBON FILM RESISTOR	2	NN-D801,NN-D851 470Ω,1/4W,±5%
JPR3	ECKR1H102ZF	CERAMIC CAPACITOR	1	NN-D801,NN-D851 0.001μF/50V/− 20%+80%
JPR4	ECBT1H101KB5	CERAMIC CAPACITOR	1	NN-D801,NN-D851 0.0001μF/50V/− 10%+10%
JPR10	ERD25VJ152T	CARBON FILM RESISTOR	1	NN-D501,NN-D551 1.5kΩ,1/4W,±5%
JPR15,16	⚠ECBT1E103ZF5	CERAMIC CAPACITOR	2	NN-D501,NN-D551 0.01μF/25V/−20% +80%
JPR17	ERDS2TJ1R1T	CARBON FILM RESISTOR	1	NN-D501,NN-D551 1.1Ω.1/4W,±5%
Q1	UN4123-(TA)	TRANSISTOR,SI,300MW	1	
Q2	2SA720PRTA	TRANSISTOR,SI,400MW	1	200MHZ
Q5	UN4111-(TA)	TRANSISTOR,SI,300MW	1	NN-D801,NN-D851
Q6	2SC1318QSTA	TRANSISTOR,SI,400MW	1	200MHZ
Q7	UN4211-(TA)	TRANSISTOR,SI,300MW	1	
R1,2,30	ERDS2TJ201T	CARBON FILM RESISTOR	3	200Ω,1/4W ±5%
R4,10,13,14, 32,34	ERDS2TJ103T	CARBON FILM RESISTOR	6	10KΩ,1/4W ±5%
R5,16,35	ERDS2TJ512T	CARBON FILM RESISTOR	3	5.1KΩ,1/4W,±5%
R7,31,36,37, 38,39,40,41	ERDS2TJ751T	CARBON FILM RESISTOR	8	750Ω,1/4W,±5%
R9,47	ERDS2TJ471T	CARBON FILM RESISTOR	2	470Ω,1/4W ±5%
R12,18,24	ERDS2TJ620T	CARBON FILM RESISTOR	3	62Ω,1/4W,±5%
R15	ERDS2TJ153T	CARBON FILM RESISTOR	1	15KΩ,1/4W ±5%
R20	ERDS2TJ510T	CARBON FILM RESISTOR	1	51Ω,1/4W ±5%
R22	ERDS2TJ390T	CARBON FILM RESISTOR	1	39Ω,1/4W,±5%
R26,28	ERDS2TJ101T	CARBON FILM RESISTOR	2	100Ω,1/4W,±5%
R33	ERDS2TJ914T	CARBON FILM RESISTOR	1	910K,1/4W,±5%
R42	ERDS2TJ104T	CARBON FILM RESISTOR	1	NN-D501,NN-D551 100KΩ,1/4W,±5%
R42,45	ERDS2TJ104T	CARBON FILM RESISTOR	2	NN-D801,NN-D851 100KΩ,1/4W ±5%
R43	ERDS2TJ105T	CARBON FILM RESISTOR	1	1MΩ,1/4W,±5%
R48	ERDS2TJ102T	CARBON FILM RESISTOR	1	NN-D801,NN-D851 1.0KΩ,1/4W ±5%
R59,60	ERDS2TJ392T	CARBON FILM RESISTOR	2	3.9KΩ,1/4W ±5%
RY1,2,3,8	⚠AEBG5B18P-1	POWER RELAY	4	18V
RY4,5,7	⚠AEG5J1EG18B	POWER RELAY	3	18V
RY6	⚠ AEAWJXDC18G	POWER RELAY	1	18V
SPACER	A82845540GP	SPACER CUSHION	1	NN-D501,NN-D551
SPACER	A82846000BP	SPACER CUSHION	1	NN-D801,NN-D851
T1	⚠A62496000BP	L.V.TRANSFORMER	1	ETP48SFC8AZU
VR1	EVNDCAA03B14	VARIABLE RESISTOR	1	NN-D801,NN-D851
Z1	AEXB06104JT	COMPOUND-RESISTOR	1	100KΩX6
ZD2	AEDZ4R7ES3T1	ZENER DIODE,SI	1	
ZD3	AEDZ24ES3T1	ZENER DIODE,SI	1	

SERVICE FIXTURES AND TOOLS

EXTENSION CABLES

NOTE: To be used when repairing the DPC board assembly directly on the oven for easy access of the board.

Ref. No.	Part No.	Description	Pcs/ Set	Remarks
	AT40M011	11 pin Extention Cable	1	Cable No. 19
	AT40M007	7 pin Extension Cable	1	Cable No. 37
	AT40M006	6 pin Extension Cable	1	Cable No. 18
	AT40M004	4 pin Extension Cable	1	Cable No. 16
	AT40E006	1 pinX6 Extension Cable	2	Cable No. 9

DPC COMMON CHECKER AND ITS CABLE

NOTE: To be used only when DPC common checker is available.

Ref. No.	Part No.	Description	Pcs/ Set	Remarks
	ANE600ZK70GP	DPC. Common Checker	1	
	AT30A6000GP	DPC. Checker Cable	1	NOTE